Peace Corps Service to Develop Community Capacity for Sustainability
Planning: The Experience of Areguá, Paraguay
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ABSTRACT

This paper examines an effort to develop community capacity to engage in sustainability planning as part of a Peace Corps Municipal Services Development project in Areguá, Paraguay. It sketches the context in which the initiative occurred, outlines relevant academic research on community sustainability planning, and describes the strategies adopted to assist Areguá in securing the critical mass of community capacity necessary to engage in sustainability planning. The paper concludes with an outline of continuing challenges for sustainability in Areguá and a description of means by which those concerns might be addressed.

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1. Introduction

The shifting global discourse on sustainable development and how it can be achieved is shaping political dialogue in Areguá, Paraguay. Located on the urban growth boundary of metropolitan Asunción, Paraguay's capital and largest city, Areguá faces rapid population growth, poverty, and chaotic urbanization. Meanwhile the concepts of 'sustainable development' and 'civic participation' are evangelized by an increasingly diverse array of societal actors in Areguá as solutions to the community's ills. More generally, strong local institutions and broad-based participation are widely recognized by development practitioners as fundamental to ensure sustainable community development.[1] This paper reports on an effort to operationalize sustainable development and civic participation at the municipal level by building community capacity to engage in sustainability planning.

1.1 Project Background

Paraguay is currently struggling to emerge from a long history of highly centralized authoritarian rule, perfunctory civic engagement, and notoriously weak public institutions. The national government initiated a decentralization program in 1992, in hopes of attaining greater democratization, effectiveness and efficiency in municipal governance. In 1999, Peace Corps Paraguay created a Municipal Services Development project focused on institutional capacity building "to improve the planning and delivery of services to underserved communities."[2] The project aims to improve the type, scope, quality, and efficiency of public services and improve municipal financial management while also engaging community participation in governance. It seeks to accomplish these goals through coordination of civic engagement and effective planning, management, and evaluation practices.[3]

In 2007 the municipality of Areguá requested technical support from the Peace Corps with the stated intention of improving its institutional capacity to deliver municipal services; including the administration of municipal environmental and land-use planning. Peace Corps accepted Areguá's request and agreed to place a volunteer in the community to provide technical support to the municipal administration. The program director of Peace Corps Paraguay's Municipal Services Development project selected a volunteer with appropriate skills and abilities to address the municipality's articulated goals and needs.

Over the next twenty-four months, the volunteer worked on implementing the goals and objectives of the project, tailored to the local milieu. The volunteer lived and worked in Areguá, and came to know its opportunities and challenges first-hand. By partnering with civil servants, citizens, and local civil society organizations, the project aimed at improving Areguá's institutional and community capacity to engage in the dynamic process of sustainability planning.

The municipality of Areguá had previously developed a land-use plan as part of its participation in the ORDAZUR (***O**rdenamiento **A**mbiental de **Z**onas **U**rbanas*, Urban Zone Land Planning)

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[1] Mark Roseland, Toward Sustainable Communities: Resources for Citizens and their Governments (Gabriola Island, BC: New Society Publishers, 2005).
[2] Peace Corps Paraguay, "Peace Corps Municipal Services Development Work Plan" (2009).
[3] Ibid.

project, over the course of 17 months from June of 2002 to December of 2003. ORDAZUR emerged from a partnership between the Paraguayan Secretary of the Environment (SEAM) and the German Federal Institute for Geosciences and Natural Resources (BGR). Its aim was to foment "the rational use and protection of natural resources in urban areas through the development of land-use planning instruments and strategies."[1] ORDAZUR contracted *Altervida*, a Paraguayan environmental NGO, to develop a land-use plan for Areguá. Peace Corps and JICA (the Japanese International Cooperation Agency) volunteers collaborated with the municipality of Areguá and *Altervida* to develop and implement a land-use plan or *POTA* (*Plan de Ordimeniento Territorial Ambiental*) for the municipality. This team designed the plan so as to control Areguá's growth to preserve its rural, natural, and cultural heritage. POTA also sought to prevent the development of subdivisions in sensitive portions of the Lake Ypacarai watershed or in areas that would prevent the cost effective delivery of public services including utilities, schools, roads, and healthcare.

Areguá's POTA was a critical first step in developing the community's ability to engage in planning. Unfortunately *POTA*'s broad scope and limited implementation did not adequately address many of the challenges it was created to tackle. Once outside technical support was removed *POTA* became a static plan, ceasing to evolve and develop. *POTA* did not effectively address how to sustain a continuous and dynamic process of sustainability planning in the community. *POTA* was articulated over several months and nominally involved a wide range of community members, but essentially was an outside plan drawn up by a small group of technocrats from the capital Asunción, who supplied resources and support to the municipality. When those experts were no longer actively working on *POTA,* and resources stopped flowing into the municipality for its maintenance and updating, its relevance to municipal administration diminished. That is, *POTA* was externally driven and withered when the originators no longer sustained the project economically or technically.

The Peace Corps' municipal services development project sought to address these deficiencies by developing the community's capacity to engage in sustainability planning. The initiative was targeted at both municipal employees and local community organizations beginning in 2007. The initial phase of the project was focused on developing a situational analysis of Areguá. This step was followed by an inventory of the community's resources. That analysis examined the community's natural, social, and economic capital, identifying the resources residents valued as well as the area's physical and ecological infrastructure. This information was compiled and preferred visions for Areguá's future were presented to the community through a charrette process. A local environmental organization, the Areguá District Environmental Council (CDAA), along with the municipality, created an array of small projects to address Areguá's challenges and to build a basis for expanded development planning. These projects were based on the community's input in the form of a participatory design Charrette. The efforts developed had various goals including wetlands protection, municipal tree planting, wastewater management, recreation area development, and the creation of a master plan. These projects used participatory research tools to implement action plans, develop budgets, and create evaluation and monitoring strategies.

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[1] H.P. Thominski, "El Proyecto 'Ordenamiento Ambiental de Zonas Urbanas' (ORDAZUR), Paraguay" Simposio Internacional de Geologia Ambiental para Planificación del Uso del Territorio. Puerto Varas, 4-6 Noviembre 2002.

1.2 Structure of the Paper

This paper summarizes and analyzes an attempt by some of Aregua's citizens to improve their community by engaging in sustainability planning and participatory research. The paper begins with a sketch of the community's context, analyzing aspects of Areguá's history, geography, economy, population, politics, environmental and social challenges. In short, it first provides a situational analysis of Areguá. An account of the project's framework follows thereafter. This includes an operating definition of sustainable development, community sustainability planning, and capacity building derived from relevant academic literature. This framework defined the project's grassroots and participatory approach. Its central features are described in the paper's section concerning research methods and project design. Next follows a description of the purpose, objectives, goals, and actions of the overall project, explaining what was done to build capacity for community sustainability planning and why specific strategies were adopted. The sixth section outlines the results of those initiatives and concludes with an evaluation of the project in light of the literature and the effort's delimited goals. The paper concludes by presenting questions for future consideration concerning sustainable community development planning in Areguá, and similar communities situated on the global economic periphery.

2. Context

This section of the paper describes the context of the Peace Corp Municipal Services Development project in Areguá. It investigates Areguá's history of settlement, geography, economy, character of the population, and politics. It concludes by exploring the social and environmental challenges faced by Areguá.

2.1 Brief History of Settlement

While searching for the lost expedition of Juan de Ayolas, Spanish *conquistador* Juan de Salazar founded Asunción as a military post on the Feast Day of the Assumption, August 15, 1537. The city quickly became the center of Spanish colonial activity in the Southern Cone and remained so until surpassed by Buenos Aires in the late 18th century. At the time of colonization, various Guaraní speaking tribes settled the eastern half of what is now Paraguay. The Guaraní were semi-sedentary agriculturalists with a multi-settlement tribal political structure and a polytheistic-animistic religion.[1] The process of colonization forced the indigenous population onto *estancias* (private ranches) or *encomiendas* (religious colonies created to instruct indigenous population in Roman Catholicism and Spanish culture).

The indigenous Guaraní believed the gods descended to the *Areguá*, or "the hillock above," to form all creation.[2] The Guaraní Mongolas band of chief Tapaicua established its longhouse on the eastern shore of Lake Ypacarai at the time of Spanish conquest in 1538; soon after an *encomienda* of the Mercedian order took possession of the people and their land.[3] After independence from Spain, Dr. Gaspar Francia, a hermetic and enigmatic totalitarian dictator,

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[1] Richard K. Reed, Prophets of Agroforestry: Guaraní Communities and Commercial Gathering (University of Texas Press, 1995).
[2] Narciso Colmán, Nuestros Antepasados (San Lorenzo: Editorial Guaraní, 1937).
[3] Margarita Durán Estragó, Areguá Rescate Histórico (Asunción: Ediciónes y Arte, 2005).

attained the religious order's land. After Dr. Francia died, control of the estate passed to the military, then the Congress, and ultimately to father and son Presidential despots, Antonio and Fracisco Lopez. During this period the emergent community of Areguá was divided into *minifundia* (peasant small holdings) and *latifundia* (large estates of the elite).[1] In 1862 Areguá was granted township status by executive decree.[2]

In 1864 Paraguay entered into a devastating armed conflict with the combined forces of Brazil, Argentina, and Uruguay, the War of the Triple Alliance. After a protracted struggle, Paraguay was utterly defeated in 1870. Its pre-war population of 525,000 was reduced by the ravages of the conflict to between 150,000-160,000, with an estimated 28,000 adult males.[3] The War proved profoundly detrimental to Paraguay's development. Over a century passed following the conflict's end, and little changed in what became a stagnant society. Paraguay maintained its laconic rhythms of life. Nonetheless, the annihilation that resulted from the War of the Triple Alliance, as difficult as it proved, was only partly to blame, as foreign and domestic conflict continued nearly unabated over the following century too, which witnessed the Chaco War, a Civil War, and decades of strife among the nation's ruling parties. This continuous period of unrest and war prevented Paraguay from achieving the modernization and industrialization experienced by other states in the Southern cone during the period.[4]

As the years passed, and growth remained static, Areguá retained its traditional Latino-Guaraní culture and land-use patterns. Agricultural land and smaller rural villages known as companias surround Areguá's urban center. This is the typical Paraguayan land distribution pattern consisting of a combination of small family holdings and large *estancias* worked by peons. Change in land ownership structure in the area began only in the late 1970s and early 1980s as royalties from the newly constructed Itaipu dam spurred an economic expansion fueling a wave of urbanization.[5] Massive in-migration to the capital region had been previously avoided by the policy of granting landless peasants tracts of jungle to settle. Now, however, with the dam's construction and the area's ensuing economic growth, Areguá's proximity to Asunción led to increased in-migration as individuals sought access to low-priced land and housing on the metropolitan periphery. At today's growth rate, over 68,000 people are expected to live in Areguá before the end of the decade, up from 14,558 in 1982.[6] Areguá is projected to have more than 115,000 residents by 2020.[7] These population pressures have created an immediate and crucial challenge for the community: accommodating rapid urbanization while preserving its historical, cultural, and natural heritage.

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[1] Ibid.
[2] Ibid.
[3] Thomas Whigham and Barbara Potthast, "The Paraguayan Rosetta Stone: New Insights into the Demographics of the Paraguayan War, 1864-1870," *Latin American Research Review* 34 (1) (1999): 174-86.
[4] Paul C. Sondrol, "Paraguay and Uruguay: Modernity, Tradition and Transition," *Third World Quarterly* 18 (1) (1997): 109-125.
[5] Ibid.
[6] Dirección General de Estadística, Encuestas y Censos, *Paraguay Proyección de la Población Nacional por Sexo y Edad 2000-2050* (Asunción, 2005).
[7] Ibid.

2.2 Geography

Paraguay is a landlocked nation bisected by the Paraguay River into two geographic regions, the Chaco to the West, and the *Oriente* to the East. The Chaco is a flat, inhospitable plain of scrub forest, comprising more than sixty percent of the landmass of Paraguay while accommodating less than two percent of its population. The nation is bounded by Bolivia to the North, Argentina to the South and West, and Brazil to the East. It contains 406,752 square kilometers, or roughly the size of California and has an estimated population of 5,657,991.[1,2] (In contrast, California's population exceeds 37,000,000.) Paraguay is sub-divided into seventeen departments, fourteen in the *Oriente* and three in the Chaco, and further sub-divided into 226 municipalities.

Areguá's modern municipal form was adopted in 1957. The community is located 28 kilometers due east of Asunción and is 110 square kilometers in area.[3] It serves as the capital city of the nation's Central Department.[4] With a population of 1,200,000, the Central Department is home to 24 percent of Paraguay's population while comprising only 0.6 percent of the country's land mass.[5] The Department consists of the municipalities in the immediate vicinity of Asunción. Areguá lies completely inside the Lake Ypacaraí watershed, and contains three sub-watersheds: Lake Ypacaraí, the Salado River, and the Yuquyry stream which forms the municipality's western border. The lake provides the town's eastern boundary. The community of Luque, an active commercial city of 185,000,[6] lies to the West and North. To the West and South is Capiata, another more densely urbanized municipality closer to Asunción, with approximately 154,000 residents.[7] To the South, also on Lake Ypacaraí, is Itaguá, with a population of 50,000.[8] (See Figure 2.1)

Areguá is located in the *Capital* bioregion, which is a transitional ecological zone demonstrating characteristics of various surrounding bioregions, including hilltop and riverside forests, various types of wetland, and palm savannas.[9] Much of the land bordering Lake Ypacarai is ephemeral wetland. The *Yvytypané,* a low hill range, transverses Areguá from north to south resulting in an undulating hill and valley landscape. The hills Koi and Chororri, which form part of this range, are unique geological formations of hexagonal columnar crystals that have been declared national monuments. The climate is humid subtropical, with hot, wet summers and cool to cold, dry winters, similar to the climate of central Florida. Politically, the municipality of Areguá has long been divided into four urban neighborhoods and nine historically rural *companias*. Three two-lane paved roads provide access to surrounding municipalities. In recent decades the majority of new urbanization has been concentrated along two of these roads that connect Areguá to two major national highways in Luque and Capiata.

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[1] Dirección General de Estadística, Encuestas y Censos, *Compendio Estadístico 2003* (Asunción, 2003).
[2] Ibid.
[3] Estragó, *Areguá Rescate Histórico*.
[4] Municipalidad de Areguá, "Areguá está Florieciendo" (2007).
[5] Dirección General de Estadística, Encuestas y Censos, *Compendio Estadístico 2003*.
[6] Dirección General de Estadística, Encuestas y Censos, *Atlas Censal del Paraguay* (Asunción, 2003).
[7] Ibid.
[8] Ibid.
[9] Ana Pin and Gloria Cespedes. *Plantas Medicinales del Jardin Botanico de Asunción* (Asunción: Proyecto Ethnobotainica Paraguaya, 2009).

Figure 2.1
Map of the Central Department
Source: Dirección General de Estadística, Encuestas y Censos, Atlas Censal del Paraguay (Asunción, 2003).

Map of the Central Department
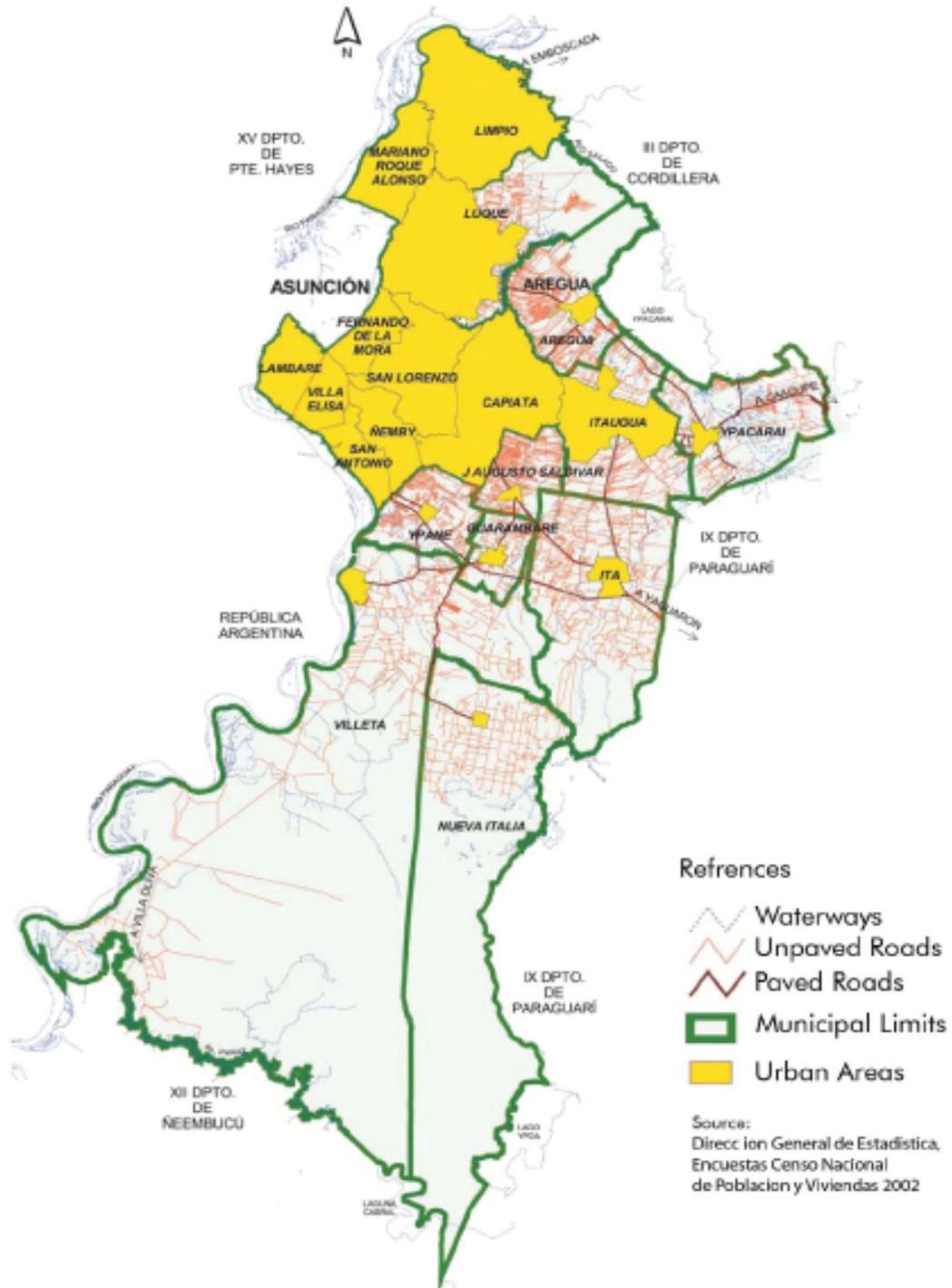
2.3 Economy

Paraguay's economic GDP in 2009 was $13.611 billion resulting in a per-capita GDP of $2,169; among the lowest in the Americas.[1] The nation has a predominantly agricultural economy, with farming and ranching comprising 80 percent of total registered exports.[2] Soy, corn, manioc, sugar, and cotton are cornerstone crops; Paraguay's ranching sector is also significant, with over 10 million registered head of cattle.[3] Paraguay's formal commercial sector struggles and its manufacturing sector is among the smallest in Latin America, constituting only 14 percent of the economy, and is primarily focused on agricultural products processing.[4] The nation also has a large subsistence sector, as well as sizable urban unemployment, informal-employment, and underemployment. Paraguay's large underground re-export and contraband sector is reported to involve perhaps ten times the nation's official GDP.[5] The country has vast hydroelectric resources, including the world's second largest hydroelectric generation facility built and operated jointly with Brazil; Itaipú Dam. Paraguay lacks significant mineral or petroleum resources. The government welcomes foreign investment in principle and accords national treatment to foreign investors, but notoriously rampant corruption has long deterred international investment.[6]

Areguá's economic activity is spatially and socially segregated. For many newer residents, the town is a bedroom community with affordable land accessible to the employment opportunities of metropolitan Asunción. Many professionals from Areguá commute to Asunción. In the *companias* away from the main transportation routes, the primary household economic activity is small-scale agriculture. Strawberries are a particularly crucial cash crop. Areguá is known as the Strawberry and Ceramics Capital of Paraguay. The ceramics are produced in the humbler neighborhoods of the urban center. The ceramics produced range from planters to hand-painted garden gnomes and nativity scenes. The ceramics and other crafts are sold mainly to visitors coming from Asunción to see Areguá's tourist attractions: its historic architecture, the lake, and surrounding hills. Much of the local economy is informal or subsistence based. As a result, little authoritative data exists regarding Areguá's economy.

2.4 Character of the Population

The Guaraní language plays a crucial role in Paraguayan identity; it is the only officially bilingual country in Latin America. More than 88 percent of residents speak Guaraní in the home and half of the rural population speaks only Guaraní, a highly expressive and musical language. It is the mother tongue of Paraguay, and it is said that although Paraguayans may speak in Spanish, they think in Guaraní. Racially, Paraguay is the most *mestizo* (mixed) nation in Latin

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[1] International Monetary Fund, "World Economic Outlook Database," available at: www.imf.org/external/pubs/ft/weo/2009/02/weodata/weoselgr.apsx (October 2009).
[2] Economic Commission for Latin America and the Caribbean, "Balance Preliminar de Las Economías de América Latina y El Caribe" (1999).
[3] Dirección General de Estadística, Encuestas y Censos, *Anuario Estadístico del Paraguay 2003* (Asunción, 2003).
[4] Economic Commission for Latin America and the Caribbean, "Balance Preliminar."
[5] Ira Sohn, "With All Deliberate Delay: Economic and Financial Reform in Paraguay." International Trade and Finance Association 15th International Conference, Paper 51 (International Trade and Finance Association, 2005).
[6] World Bank Group, "Doing Business 2008 Paraguay" (2008).

America, with 95 percent of the population of Ladino-Guaraní stock.[1] This linguistic and ethnic homogeneity form the bedrock of Paraguay's strong and resilient cultural identity.

Paraguay has a highly traditional socio-economic structure, and client relationships feature prominently in social organization.[2] The nation is among the least urbanized countries in Latin America, with 46 percent of the population living in rural areas, and 10 percent of the urban population living in communities of less than five thousand people.[3] It ranks second highest in both percentages of agricultural workers (31 percent) and informal workers (61.3 percent).[4, 5] The population is young, with more than one-third of Paraguayans under the age of fifteen, and two-thirds under the age of thirty.[6] The country is overwhelmingly Roman Catholic; the nation's official religion, and the church plays a major role in the beliefs of Paraguayans.[7] The current President, Fernando Lugo, is a former Catholic Bishop. Family plays a central role in Paraguayan social life. Families tend to be large, with extended families often sharing, if not the same dwelling, the same parcel of land. Marriages, graduations, birthdays, *quinceneras*, and funerals are major social events. There is a strong sense of community within neighborhoods and Paraguayan towns. Soccer and *terere* (iced *yerba mate,* traditionally served in a cow horn with a filter-tipped metal straw) are national obsessions.

The cultural importance of *terere* in Paraguay cannot be overstated. Peace Corps Paraguay teaches *terere* etiquette on the first day of training, in order to facilitate cultural integration. It is a native herbal infusion of what the Guaraní call *ka'a*, not related to the tea (*camellias*) native to China, but the leaves and small stems of *Ilex Paraguais,* a tree native to the Atlantic Forest of Brazil, Paraguay, and Argentina. The raw leaves are harvested, quickly dried over a fire, and further cured for two to three years in a barn. The end product, Yerba, is prepared into the beverages *cocido*, *yerba mate*, and *terere*. *Cocido* is the ground leaf yerba carmelized with sugar and infused in hot water. *Yerba mate* is a hot water infusion and *terere* is a cold-water infusion where the ground *yerba* is poured into a receptacle called a *guampa*, which range from simple metal cups to intricately carved pieces of *palo santo* wood. Water is steeped in the *yerba* and drunk out of a filter tipped straw, the *bombilla*.

In Paraguay, the yerba mate is commonly mixed with fresh or dried ethno-botanicals called *yuyos* or *remedios*. These ethno-botanical plants serve as the primary pharmacy for common ailments. *Terere* and *mate* consumption is a primary social activity. The yerba ritual consists of sitting in a circle, passing the *guampa* from the server to the drinker, who then drinks all the liquid, and passes it back to the server who refills, and passes it to the next person in the circle.

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[1] Sondrol, "Paraguay and Uruguay."
[2] Diego Abente-Brun, "Paraguay: The Unraveling of One-Party Rule," *Journal of Democracy* 20 (1) (2009): 143-156.
[3] Dirección General de Estadística, Encuestas y Censos, *Atlas Censal*.
[4] Economic Commission for Latin America and the Caribbean, "Anuario Estadístico de América Latina y el Caribe*"* (2007).
[5] Economic Commission for Latin America and the Caribbean, "América Latina: Urbanización y Evolución de la Población Urbana, 1950–2000" (2007).
[6] Dirección General de Estadística, Encuestas y Censos, *Compendio Estadístico*.
[7] Miguel Carter, "The Role of the Paraguayan Catholic Church in the Downfall of the Stroessner Regime," *Journal of Interamerican Studies and World Affairs* 32 (4) (1990): 67-121.

Paraguayans devote hours each day to this ritual, and it is common for them to carry their *equipo* (equipment for *terere* or *mate* preparation) with them each day

Areguá, given its long history of settlement, has developed a distinct cultural identity. It has a colorful oral history of resident ghosts, myths, and legends. Various ghosts of past Areguenos who met unhappy ends are said to haunt many of the town's historical sites. Areguá is also a creative community, home to several art galleries and some of Paraguay's better known artists and writers including Luís Cogliolo, Carlos Colombino, Herman Guggiari and Lucy Yegros. *La Babosa*, a classic of Paraguayan literature, describes the town during its golden days as a summer retreat for prominent *Liberal* (PLRA party) *Asunceños* a century ago. It captured Areguá's small town insularity and tranquil daily rhythms. Areguá is also a center for traditional Paraguayan handicrafts, especially ceramics and reed-work. Many of Areguá's traditions are tied to the local Catholic Church, with each neighborhood maintaining its patron saint's festivities and chapels.

2.5 Politics

Paraguayan politics are characterized by a brutal, no-holds-barred, form of kleptocracy whose "objective becomes getting into the distributional game through direct access to the executive apparatus, regardless of the niceties of electoral outcomes and democratic procedures."[1] The *Colorados* (ANR: *Asociación Nacional Republicana*) and the *Liberales* (PLRA: *Partido Liberal Radical Authitico*) have "long remained venal and repressive towards one another."[2] Party affiliation is not based on ideology or socio-economic status; rather it is a family legacy, "a loyal team with which to face the opposition."[3] Paraguay's political heritage "underlies an archetypical praetorian society, characterized by: executive dominance, non-elective rule, *golpes*, continual military involvement in government, and weakness (or absence) of effective countervailing political institutions. Militarism remains the rule rather than the 'exception state' in Paraguay."[4] Paraguayan adolescents are commonly drawn to careers in the military, police, and political parties as these careers are viewed as potentially more lucrative than employment in productive sectors.

Paraguay has a long history of dictatorial and authoritarian rule interspersed with ineffectual democratic periods characterized by domination by foreign powers. Following independence from Spain in 1811, three authoritarian military dictators ruled Paraguay successively. The last of these led the nation into the disastrous 1864 War of the Triple Alliance, noted above. That conflict resulted in a destitute nation of girls, women, young boys, and old men.[5] Consequently, most publicly owned land was sold to Anglo-Argentine and Brazilian capitalists, who backed opposing factions for exploitation of Paraguay's resources.[6] These groups later came to back the

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[1] James Malloy, "The Politics of Transition in Latin America." In J. Malloy and M. Seligson, eds., *Authoritarians and Democrats: Regime Transitions in Latin America* (University of Pittsburgh Press, 1987): 3.
[2] Sondrol, "Paraguay and Uruguay." p. 111
[3] Nancy Powers, "The Transition to Democracy in Paraguay: Problems and Prospects." Working Paper 171 (Notre Dame, 1992).
[4] Sondrol, "Paraguay and Uruguay." p. 128
[5] Ibid Whigham
[6] Sohn, "With All Deliberate Delay."

nascent political parties, with the Anglo-Argentines supporting the *Liberales* and the Brazilians the *Colorados*.

Political power has alternated during the past 100 years between the *Colorados* and *Liberales*, with two brief military interludes in the 1930s and 1940s. In 1954 General Alfredo Stroessner gained power in a *coup d'état* and took control of the military, the Colorado party, and the government; creating an authoritarian regime that endured for 35 years. [1] This history of weak democracy and decades of iron-fisted dictatorial rule has shaped the character of Paraguay's governance:

> *The waves of authoritarian history that have washed over Paraguay not only eroded incipient democratic ideals, but also sharpened the authoritarian tendencies. Given Paraguay's violent history of mass-involvement in politics (notably the 1947 civil war), the Colorado party and its ancillary organizations came as close to becoming a totalitarian movement as Paraguay's rudimentary technology and Stroessner's limited aims would allow.* [2]

In 1989, Stroessner's sultanistic and kleptocratic rule came to an end in an internal coup, and a new constitution was written in 1992. The government remained in the hands of the Colorado party an additional 19 years, for a total of 61 years, until the election of former Bishop and opposition candidate Fernando Lugo in 2008.

The new Paraguayan constitution of 1992 introduced several changes in the political system. It called for a decentralization and local government strengthening process in which a degree of autonomy, as outlined in the municipal organic law, was transferred to local authorities. In 1991, just prior to the drafting of the new constitution, the first direct election of municipal mayors in Paraguay's history took place. The opposition Liberal Radical Authentic Party (PLRA) won in several cities, including Asunción. Before these elections, the president had directly appointed all mayors..Municipal administrations have had to adapt to a new set of responsibilities and expectations and a new "broad mandate to provide services in a wide variety of areas including education, health, police, and sanitation."[3] The constitution requires municipal administrations to respond to the needs of the population that elected them, instead of simply exercising loyalty to party bosses, as in the past.

Paraguayan politics at the municipal level are just as visceral as on the national political scene. Despite the new orientation embraced in the 1992 constitution, the objective for participants engaged in the municipal political process is to retain power and distribute resources among loyal partisans. This orientation paired with the lack of general organizational processes makes these local governments inefficient and unresponsive to the needs of the general population. The few services provided by municipalities are often substandard due to lack of infrastructure, poor planning, insufficient revenues, and mismanagement. Paraguayan municipalities typically lack the intellectual, political, and social capacity to deliver sufficient infrastructure and services effectively to all of the populace. These weaknesses usually lead to the provision of few services to a favored segment of the population, resulting in fierce competition (with frequent resulting graft) for those scarce resources.

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[1] Abente-Brun, "One-Party Rule." p. 143
[2] Sondrol, "Paraguay and Uruguay." p.114
[3] World Bank "Paraguay Decentralization: Issues and Options," Unpublished.

Despite its new constitution, Paraguay has one of the most highly centralized public sectors in Latin America; sub-national governments execute only about 6 percent of total consolidated government expenditures, having only been empowered truly to do so as late as 1999, 7 years after the constitutional mandate.[1] The decentralization process has been fraught with difficulties arising in good measure from the fact that there is little history of local governance and local governments' capabilities are limited. Moreover, Paraguayans have been actively discouraged from participating in government (other than sanctioned Colorado party events) for the past four generations. Decentralization was intended to improve the quality and efficiency of public social and infrastructure goods and services, yet progress has been slow.

Areguá has a Liberal *intendente* (mayor) who heads the municipal executive branch with its twelve departments, such as: Tourism, Human Resources, and Works and Services. The legislative branch is the *junta municipal* (municipal board) with twelve elected members, six Colorados, five Liberales, and one member of the National Encounter Party. Areguá faces the same set of administrative challenges faced by other Paraguayan municipalities. The municipal budget (apart from royalties from the Itapúa dam destined by law for public works) is almost entirely spent on employee salaries, especially contractors who are loyal partisans. Institutional capacity is low as are the salaries and wages offered to municipal employees. There is no incentive for quality job performance. The municipality has not released the community's budget to the public since the first quarter of 2007 and has demonstrated little interest in either improved transparency or public participation. There is no system of open bidding on public contracts, and work is given to political allies at elevated costs. The politicians in power are widely perceived by the community as corrupt. The municipality collects less than 20 percent of assessed real estate taxes. [2] Residents are often unwilling to pay taxes, as they do not see benefits created by their tax dollars.[3]

2.6 Social challenges

Paraguay's social challenges are numerous and complex; the country's state of affairs is lamentable. Paraguay lags behind the rest of Latin America in nearly every social indicator from literacy to GDP per capita.[4] The United Nations placed Paraguay 101st out of 174 countries in its 2009 edition of the Human Development Index.[5] Wealth and power are concentrated in the hands of the few: of arable land, 75 percent is owned by 10 percent of the population and Paraguay has among the highest rates of income inequality in the world (the nation's Gini Index is 0.57).[6,7] It is not uncommon to see a late model Mercedes-Benz zipping past rickety rag-picking carts led by emaciated horses on the streets of Asunción. By the Paraguayan

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[1] Ibid.

[2] Personal communication from Carlos Hermosilla, director of municipal cadastre department, Areguá, September 20, 2008.

[3] Ibid.

[4] Sohn, "With All Deliberate Delay."

[5] United Nations Development Program. "Human Development Report 2009 Paraguay" available at hdstats.undp.org/en/country_facts_sheets/cty_fs_PRY.html. (October 2009).

[6] World Bank Group, "Paraguay Access and Administration Project" (2008).

[7] Estanislao Gacitúa Marió, Annika Silvia-Leander, and Miguel Carter. "Paraguay: Social Development Issues for Poverty Alleviation." Paper 63 (Social Development Department of the World Bank, 2004).

government's own estimate, 35 percent of the population lives in poverty and 19 percent live in extreme hardship.[1] Paraguay's destitution is institutionalized in the dependence, paternalistic clientism, and systemic corruption that organize society. Paraguay's corruption is pervasive; it was ranked the second most corrupt country of 85 countries studied by Transparency International in 2002.[2] Paraguayans joke that it would have ranked most corrupt, but the judges were bribed.

Statistics on health and education are similarly grim: only 58 percent of students complete 6th grade and of those who start secondary school, only 51 percent graduate. Consequently, only 8 percent of 18 to 24 year-olds are enrolled in college. [3] School infrastructure is skeletal. In 1995, only 70 percent of educational establishments had running water and proper sanitation, 14 percent had a telephone, and half had electricity. Less than half had a dictionary or a globe.[4] Malnutrition is prevalent in Paraguay, sanitation is poor, there is a dearth of health facilities, and an absence of health planning at both the local and national level. In 2007 alone more than 117,000 Paraguayans were treated for intestinal parasites and more than 20,000 were assisted with anemia from parasites, according to official statistics.[5] Paraguay has one hospital bed per 855 inhabitants, one physician per 1231 inhabitants, and an infant mortality rate of 23.8 per 1000 live births (nearly four times that of the Untied States which has an infant mortality rate of 6.8 and a physician for every 434 people).[6, 7] In the years since the fall of the dictatorship, Paraguayans have also faced an increasing sense of public insecurity, fueled both by media reports of high profile crimes and political exploitation of the issue of violent crime.[8] That is, this growing sense of insecurity is partially justified and partly the result of manipulation of the public's fear for political purposes.[9]

Areguá increasingly exhibits Paraguay's broader social ills. These problems are most evident and expressed most clearly in Areguá's informal and illegal settlements. Homeless rural migrants have settled several of Areguá's *companias* as they have sought the economic opportunities represented by metropolitan Asunción. These residents are among the poorest of all Paraguayans, the landless rural class of agricultural *campesinos sin tierra.* These workers are often forced from their homes by agricultural industrialization; particularly with the development of large-scale soy plantations. In decades past the trend was rural to rural migration, but this has now been supplanted by rural to urban migration. Dwellings erected by *sin techos* (homeless rural to urban migrants) are impermanent and precarious, providing little protection from Paraguay's punishing weather. *Sin techo* settlements lack basic infrastructure: passable roads, sanitation, water, and

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[1] Economic Commission for Latin America and the Caribbean, "Anuario Estadístico."
[2] Transparency International "2002 Corruption Perceptions Index," available at
www.transparency.org/policy_research/surveys_indices/cpi/2002 (October 2009).
[3] Economist Intelligence Unit, "Country Risk Service, Paraguay, 4th Quarter" (London: 1998).
[4] Ibid.
[5] Direction General de Estadística, Encuestas y Censos. "Salud y Bienstar Social" *Anuario Estadístico 2007* (Asunción 2007).
[6]Ibid.
[7] The World Bank, World Bank Development Indicators. Available at /data.worldbank.org/data-catalog/world-development-indicators?cid=GPD_WDI (Februrary, 2011)
[8] Harvard School of Law International Human Rights Clinic "Security in Paraguay: Analysis and Responses in Comparative Perspective" (2007).
[9] Harvard School of Law International Human Rights Clinic "Security in Paraguay: Analysis and Responses in Comparative Perspective" (2007).

electricity. Areguá's ongoing rapid urbanization has decreased social cohesion and increased feelings of insecurity. Many long-time residents cite the new migrants as the central cause for their growing insecurity. That attitude further socially isolates the settlement communities, causing even some of their residents to long nostalgically for the security of the dictatorship.

2.7 Environmental challenges

Paraguay's once vast Atlantic rainforests have been largely converted into agricultural land during the last 50 years. In 1973 forest canopy covered 73 percent of the Atlantic Forest Ecoregion; by 2000 only 25 percent of the forest remained. This remnant forest is largely confined to inaccessible hilltops and Paraguay's limited protected areas.[1] Protected areas are often on private lands, and landowners have little incentive to prevent the illegal logging and poaching that often occurs there, and often directly profit from such practices.[2] This loss of habitat, especially of the Alto Paraná Brazilian Atlantic Rainforest ecosystem, has transformed the landscape and placed dozens of species in danger of extinction, many of them native.[3] Though less extensive than in the East, similar forest clearing for cattle ranching has been occurring in Paraguay's Chaco, among the world's most bio-diverse ecosystems, and is the most pressing environmental issue in that sparsely populated region.[4]

Most Paraguayans burn their trash, as solid waste collection is largely confined to a few metropolitan areas.[5] That fact is one reason that respiratory illnesses are among the leading causes of death in Paraguay; smoky haze from agricultural fires can linger for days at a time, exacerbating the problem.[6] No sanitary sewer system exists in the country outside of the wealthy areas of Asunción, and industries routinely release untreated chemical contaminates into Paraguay's watersheds. In addition to the environmentally damaging deforestation caused by the nation's vast soy plantations, hundreds of thousands of tons of herbicides, pesticides, and fertilizers are applied to the land each year, which make their way into the larger ecosystems. There is little environmental awareness in the national consciousness; littering and public dumping is commonplace, and a patina of used plastic bags seems to coat everything.
For its part, Areguá's environment has been significantly degraded. Lake Ypacarai serves as the industrial and domestic cesspool for eastern metropolitan Asunción. The odor of raw sewage can be over-powering when crossing the tributary stream of Yuquyry along the western border of Areguá. Lesser tributaries are choked with household garbage, due to the traditional method of disposal: throwing waste into the nearest stream. Garbage is also dumped in vacant lots and along streets. Household garbage and yard waste are routinely burned; when rain is expected a thick haze of smoke from these fires envelopes the town. Solid waste privately collected from

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[1] Chengquan Huang and others, "Assessment of Paraguay's Forest Cover Change Using Landsat Observation," *Global and Planetary Change* 65 (1-2) (2009): 1-12.
[2] Jesus Quintana and Stephen Morse. "Social Interactions and Resource Ownership in Two Private Areas of Paraguay," *Journal of Environmental Management* 77 (1) (2005): 64-78.
[3] Thomas Brooks and Anthony B. Ryland "Species on the Brink: Critically Endangered Terrestrial Vertebrates" Galindo Leal and Ibsen de Gusmão Câmara. Eds. *The Atlantic Forest of South America Carlos* (Washington: Island Press, 2003).
[4] Safia Aggarwal, Victor Bullen, and Julie Kunen, "Recommendations for USAID/Paraguay Environmental Program Proposed New Strategy FY 2006-2011" (2004).
[5] Altervida, "Guia para el manejo integral de los residuos sólidos urbanos en Paraguay". (Asunción: 2002).
[6] DGEEC "Salud yBienestar"

wealthier households is illegally dumped in an unlined open ditch that lies within the boundaries of Cerro Koi national monument a few kilometers from the town center. Open grazing land, productive agricultural land, and remnant patches of forest are being speculatively subdivided and urbanized, depleting remaining wildlife habitat and increasing sedimentation of the watersheds. This urbanization includes the ephemeral wetlands within the Lake Ypacarai national protected area, further contributing to the sewage entering directly into the lake. Human impacts on the Ypacarai watershed ecology are profound and are increasingly degrading the remaining pockets of natural habitat.

3. *Community Sustainability Planning*

This section constructs working definitions of sustainable development, community sustainability planning, and institutional capacity building in relation to the Municipal Services Development project in Areguá. Sustainable development is a prominent concept in development practice and theory. It has been lauded as a "critical paradigm shift for planning practice" as well as derided as "primarily symbolic rhetoric, with competing interests each redefining it to suit their own political agendas, rather than serving as an influential basis for policy development."[1,2] The core aspiration of sustainability is an integration of social, economic, and environmental considerations in the process of development.[3] The inherent tension between the economic necessity for material growth, social welfare, and the ecological reality of earth's finite limits are at the heart of the debate concerning sustainable development.[4]

3.1 *Sustainable Development*

What constitutes sustainable development remains contested; yet the concept holds enough coherence to shape a discourse.[5] There is a growing global conviction that society's very security is increasingly in danger as the vitality of natural ecosystems on which humans depend grow weaker under the expanding and seemingly relentless global demand for resources.[6] Sustainable development has been posited as a solution to spiraling human impact on the eco-sphere, vast global social inequity, and the industrial consumer economy (and culture). The concept was originally popularized by publication of The Brundtland Commission's 1987 report *Our Common Future*.[7] The Commission endorsed a politically popular, pro-growth, anthropocentric ethic to sustainable development.[8,9,10] The definition of sustainable development proposed by the commission was "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[11] The report posited

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[1] Scott Campbell, "Green Cities, Growing Cities, Just Cities?: Urban Planning and the Contradictions of Sustainable Development," *Journal of the American Planning Association,* 62, (3) (1996): 296-312.

[2] Maria Manta Conroy and Philip R Berke, "What Makes a Good Sustainable Development Plan? An Analysis of Factors that Influence Principles of Sustainable Development," *Environment and Planning A* 36 (2004): 1381-1396.

[3] Philip R. Berke and Maria Manta Conroy, "Are We Planning for Sustainable Development?" *Journal of the American Planning Association* 66 (1) (2000): 21-33.

[4] Mark Roseland, "Sustainable Community Development: Integrating Environmental, Economic, and Social Objectives," *Progress in Planning* 54 (2000) 73–132.

[5] Lamont C. Hempel, "Conceptual and Analytical Challenges in Building Sustainable Communities." In D. Mazmanian and M. Kraft eds., *Toward Sustainable Communities: Transition and Transformation in Environmental Policy* (MIT Press, 1999).

[6] Roseland, "Sustainable Community Development."

[7] Richard J. Estes, "Toward Sustainable Development: From Theory to Praxis," *Social Development Issues* 15 (3) (1993):1-29.

[8] Herman E. Daly, "Sustainable Development: From Concept and Theory to Operational Principles," *Population and Development Review* 16 (1990): 25-43.

[9] Donald Woster, "The Shaky Ground of Sustainability." In George Sessions, ed., *Deep Ecology for the 21st Century* (Boston: Shambhala, 1995).

[10] Edith G. Callaghan and John Colton, "Building Sustainable & Resilient Communities: a Balancing of Community Capital," *Environment, Development and Sustainability* 10 (2008): 931-942.

[11] World Commission on Environment and Development, *Our Common Future* (Oxford University Press, 1987).

"the satisfaction of human needs and aspirations" as the major objective of development.[1] It presented sustainable development as a solution to the environmental problems caused by an expanding population and economy, calling for a "new era of growth…more rapid economic growth in both industrial and developing countries, freer market access for the products of developing countries, lower interest rates, greater technology transfer, and significantly larger capital flows."[2]

The report was widely criticized for its 'weak sustainability' stance; it favored continued neo-classical economic expansion, often otherwise cited as a major cause of unprecedented ecospheric decline.[3,4] In this perspective, sustainability seeks to maintain the ecosystem so as to *sustain* economic growth.[5] In contrast, a 'strong sustainability' perspective sees development as societal change or "qualitative improvement" as opposed to quantitative economic growth.[6] It values quality-of-life, instead of the standard of living, as an indicator of wellbeing and views further economic expansion that reduces ecological security as antithetical to sustainability.[7,8] An ecological analysis suggests the economic expansion called for in the Brundtland commission report would require at least two additional planet Earths to produce the resources, absorb the wastes, and otherwise maintain life support.[9] More radical conceptions of sustainability call for *wide ecological* sustainability. The modifiers 'wide' and 'ecological' refer to "the protection of the full richness and diversity of life forms on the planet"; an eco-centric ethic, as opposed to the anthropocentric ethic adopted by Brundtland. [10]

Despite criticism and ongoing debate, the concept of sustainable development has been widely viewed internationally as an integrated solution to both 'underdevelopment' and the environmental crisis brought on by ongoing global industrialization. In 1992 the United Nations Conference on Environment and Development, held in Rio de Janeiro, developed the Rio Declaration on Sustainable Development. That statement was later adopted by more than 178 nations, paralleling the creation of Agenda 21.[11] Agenda 21 outlined the UN's sustainable development agenda for the 21st century.[12] It was "developed as an outgrowth of the Rio Conference to create a comprehensive plan of action to be taken … in every area in which humans impact the environment".[13]

As the concept of sustainability has gained prominence in international politics, a vast body of interdisciplinary scholarship has emerged concerning it offering a diverse array of

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[1] Ibid.

[2] Ibid.

[3] Woster, "The Shaky Ground of Sustainability."

[4] Daly, "Sustainable Development."

[5] Woster, "The Shaky Ground of Sustainability."

[6] Ibid, p. 27.

[7] Roseland, "Sustainable Community Development."

[8] Daly, "Sustainable Development."

[9] M. Wackernagel and W. Rees, *Our Ecological Footprint: Reducing Human Impact on the Earth* (Gabriola Island, BC: New Society Publishers, 1996).

[10] Arne Naess, "The Third World, Wilderness, and Deep Ecology." In George Sessions. ed., *Deep Ecology for the 21st Century* (Boston: Shambhala, 1995).

[11] United Nations Commission on Environment and Development, "Agenda 21" (1992).

[12] Ibid.

[13] Ibid.

conceptualizations. The broad spectrum of interpretations and definitions of the concept adds to continued criticisms of the construct as conceptually vague.[1] Such a wide range of definitions arises because the concept of sustainable development is:

1) *Highly dynamic, as a result of constantly seeking balance in the face of shifting background conditions*
2) *Largely indefinite, as a result of being based on necessarily abstract, context-specific, and very long-term goals.*
3) *Highly contested, as a result of the many human values, perceptions and competing political interests it evokes.[2]*

Because no consensus definition exists, it is important for present analytic purposes not to define sustainable development in general, but to define the concept as it relates to the discipline of community planning and the Municipal Services Development project in Areguá.

3.2 *Sustainable Development and Community Planning*

The concept of sustainable communities sharpens the geographic scale of focus of sustainable development to the locality.[3] International, as opposed to community, sustainable development "does not address the continuing relations of dominance issue." The international actors currently charged with sustainable development have thus far ineffectively mitigated humans' vast socio-economic impact on the ecosphere.[4] Indeed, these elites bear responsibility for many of the decisions and actions that have contributed to environmental damage.[5] In addition, significant political and cultural hurdles arise in international sustainable development planning due to the sheer scale and complexity of the issues involved. Sustainability is easier both to conceptualize and implement on the community scale.[6] The sustainable community concept has four component discourses: sustainable design, sustainability planning, sustainable local communities in practice, and policies that promote sustainability.[7] This paper focuses on the community sustainability planning discourse.

Community sustainability planning was popularized by the 28th chapter of the Agenda 21 report, also known as Local Agenda 21, which offered strategies aimed at strengthening the role of local institutions.[8] Agenda 21 recognized the importance of local authorities in sustainable development program implementation and promoted their involvement in a dialogue with their citizens regarding the adoption of a local Agenda 21 program of action.[9] Local Agenda 21 recognized that local governments play a "vital role in educating, mobilizing and responding to

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[1] J.C. Bridger and A.E. Luloff, "Toward an Interactional Approach to Sustainable Community Development," *Journal of Rural Studies* 15 (1999): 377-387.

[2] Justin M. Mog, "Struggling with Sustainability—A Comparative Framework for Evaluating Sustainable Development Programs," *World Development* 32 (12) (2004): 2139–2160.

[3] Bridger and Luloff, "Towards an Interactional Approach."

[4] Jeffery C. Bridger and A.E. Luloff, "Building the Sustainable Community: Is Social Capital the Answer?," *Sociological Inquiry* 71 (4) (2001): 458-472. p. 461

[5] Ibid.

[6] Ibid.

[7] John Browder, "Book Review: Towards Sustainable Communities: Transition and Transformations in Environmental Policy," *Human Ecology* 29 (2) (2001): 243-253.

[8] United Nations Commission on Environment and Development, "Agenda 21."

[9] Ibid.

the public to promote sustainable development." [1] Chapter 28 further advocated a broad-based consensus building process to drive sustainable development, led by local authorities.[2] Many nations have therefore focused on local government efforts to move towards sustainability.[3] This is especially the case in European planning where the concept has been adopted and advocated by the European Commission and its member nations.[4, 5]

As country adoption of sustainability planning has proceeded, the planning discipline has become further engaged with sustainable community planning. Its permeable nature appeals to planners who value its inclusive integration of social, economic and environmental interests.[6] The scholarship on sustainable community planning has moved beyond discussions of cities to "include questions of public participation, collaborative planning processes, community development, environmental conservation, and regional development with periodic sojourns into political and social theory." [7] Many have sought to reduce the conceptual fuzziness of sustainable development and translate its central concepts into planning practice.[8] In a review of key concepts of sustainability in the planning literature, Conroy and Berke identified the following four characteristics of sustainable community plans:

1) *Balance:*
   Striking a balance among environmental, economic, and social values; achieving balance entails coordination, negotiation, and compromise with all three values being represented.
2) *Dynamic Process:*
   Sustainability requires continuous movement in the direction of becoming more sustainable.
3) *Reproduction:*
   The long-term ability of systems to continuously reproduce and revitalize themselves: sustained community resiliency.
4) *Link local to global concerns:*
   Reaches beyond local interests and links local context to global (and regional) environmental, economic, and social systems. [9]

Using these elements the authors crafted a working definition of sustainable development in relation to communities:

> Sustainable development is a dynamic process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic, and ecological systems, and link local actions to global concerns.[10]

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[1] Ibid, part III, section 3, p. 23.

[2] Ibid.

[3] Abdul Khakee, "Assessing Institutional Capital Building in a Local Agenda 21 Process in Göteborg," *Planning Theory & Practice* 3 (1) (2002): 53-68.

[4] European Commission, "Sustainable Urban Development in the European Union: A Framework for Action" (1999).

[5] Khakee, "Assessing Institutional Capital Building."

[6] Kevin S. Hanna, "Planning for Sustainability: Experiences in Two Contrasting Communities,*" Journal of the American Planning Association* 71(1) (2005): 27 – 40

[7] Browder, "Book Review"

[8] Conroy and Berke, "What Makes a Good Sustainable Development Plan?" p. 22

[9] Ibid, p. 22-23.

[10] Ibid, p. 23.

The Areguá Municipal Service Development project adopted this definition of sustainable development as its conceptual framework. As this description is conceptually dense, the following five crucial elements are explored in greater depth to clarify it:

    1) balance
    2) natural capital
    3) social capital
    4) the dynamic process of sustainable community planning
    5) reproduction.

3.2.1 Balance

Community planning has long incorporated economic development functions; community sustainability planning requires that all plans, policies, and projects also integrate ecological and social considerations in decision-making processes while formulating the plan.[1] These goals often seem contradictory and conflicts arise among them that are not easily resolved.[2,3] Communities can be viewed as composed of a spectrum of subsystems, each enveloped in broader systems. Differing community stakeholders can be seen as representatives of differing subsystems.[4] For example, the local chamber of commerce could be seen as representing the commercial subsystem and environmental activists as representing the natural subsystem. This model can build "artificial barriers between stakeholders," leading to conflict.[5] Theorists have attempted to supersede this segmentation problem by viewing community as "comprised of various types of capital stock or resources upon which all community stakeholders rely and into which all community stakeholders contribute."[6] The challenge then becomes balancing and increasing this capital stock. Economic capital, the aggregate of monetized public and private assets, is well established conceptually while the concepts of natural capital and social capital are still being elaborated.[7]

3.2.2 Natural Capital

Planners have adapted the concept of natural capital from the emerging discipline of ecological economics.[8] Natural capital has been described as: "that which is provided by local, regional, and global eco-systems. Included in this category are all the various earth systems, such as: atmosphere, water systems, soil and land, biologic, and climactic," also known as the eco-sphere and ecospheric services.[9] The natural capital concept provides further insight into the 'weak' v. 'strong' sustainability debate.

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[1] Hanna, "Planning for Sustainability."
[2] Campbell, "Green Cities, Growing Cities, Just Cities?"
[3] Susan Owens, "Land, Limits and Sustainability: A Conceptual Framework and Some Dilemmas for the Planning System," *Transactions of the Institute of British Geographers, New Series* 19 (4) (1994): 439-456.
[4] Callaghan and Colton. "Building Sustainable and Resilient Communities."
[5] Ibid.
[6] Ibid.
[7] Bridger and Luloff, "Building the Sustainable Community."
[8] Roseland, "Sustainable Community Development."
[9] Callaghan and Colton. "Building Sustainable and Resilient Communities." p. 933

The 'weak' sustainability position views a generational economic activity as sustainable if it passes on an "aggregate capital stock comprising human-made, natural and human capital no less than that which now exists" to future generations.[1] This is the neo-classical economic position that views all forms of capital as equal. Strong sustainability recognizes the unique value of natural capital and embraces a precautionary position: "considering the significant ecosystem damage that has already occurred, and the uncertainty over how much more natural capital we can afford to lose, it is best to invoke a 'constancy of total natural capital rule,' allowing no further erosion of the natural capital base."[2] A strong sustainability position would seek to keep existing critical natural capital intact and hand down no less natural capital than current generations enjoy.[3] 'Wide ecological' sustainability advocates, meanwhile, view the ecosystem as invaluable, and posit that "humans have no right to reduce this richness and diversity except to satisfy vital needs." [4]

3.2.3 Social Capital

Social capital is a "term used by progressive economists and other social scientists to further our understanding of society and community."[5] Social capital can be defined as interactional responsibility, a corresponding social trust and interconnecting networks of communication that cause an increase in productivity.[6] Social capital degrades without use. Roseland has suggested the creation of social capital be the focus of development, replacing "the fundamentally illogical model of unlimited growth within a finite world with one of unlimited development which is not bound by the availability of material resources."[7] Social capital serves as the umbrella concept for the following related human-based capitals:

a) Human capital: Formal and informal knowledge base, psychological and physical health, community cohesion, self-actualization.
b) Cultural capital: Built heritage, beliefs, myths, stories, traditions, and values; all the components that constitute a community's identity and way of life.
c) Political capital: Capacity to act collectively.
d) Institutional capital: the aggregate of human, political and social capital within an organization.[8]

Without sufficient social capital a community cannot successfully participate in the dynamic process of sustainable development.

3.2.4 The Dynamic Process of Sustainable Community Planning

Community sustainability planning is not a static end result, but an ongoing process of participatory negotiation, balancing the community's stock of capital assets. The importance of

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[1] Owens, "Land, Limits and Sustainability." p. 442

[2] James Meadowcroft, "Planning, Democracy and the Challenge of Sustainable Development," *International Political Science Review* 18 (2) (1997):167-189. p. 176
[3] Owens, "Land, Limits and Sustainability."
[4] Bill Devall and George Sessions, *Deep Ecology*. (Salt Lake City: Peregrine Smith Books, 1985). p. 70
[5] Roseland, "Sustainable Community Development." p. 78
[6] Ibid.
[7] Ibid. p. 82.
[8] Ibid p. 84.

community participation in the sustainability planning process permeates the discourse concerning the topic. Gran has asserted that for people anywhere to prosper they must become participants in the decisions and processes that affect their lives: "if we can end monopoly of economic, political or cultural resources, then equity, sustainability, efficiency and the environment all gain."[1] 'Dynamic process' refers to the procedural dimension of plan making; how plans are made and implemented.

It is a continual process, as opposed to an end product. Sustainability "may be most effective not as a type of permanent objective, but as an organizing theme, or semantic device."[2] In this view, communities should define what they want to sustain by voicing the values and issues important to them.[3] Broad-based community participation is critical to developing the human, institutional, and political capital necessary to engage in sustainable community planning. To achieve true community representation in planning, the process must include a wide range of interests and provide for the frequent and sustained participation of a variety of citizens. This is known as participatory, collaborative, or communicative planning. This mode of planning creates "informed participation in decision-making institutions that affect people's lives, such as long-range comprehensive planning, (and) is at the root of civic democratic practice and therefore sustainable communities."[4]

3.2.5 Reproduction

Reproduction is the long-term ability of a community to sustain healthy, resilient, and vital social, economic, and ecological systems. It is the 'sustain' of sustainable development. Reproduction is not a duplication of the status quo; it also incorporates revitalization as a principle.[5] Revitalization can be defined as a deliberate effort to construct a more satisfying community. [6] In addition to fostering revitalization, sustainable community planning should promote the community's resiliency to crisis.[7] Community sustainability planning must: foresee and shape the scope and character of future development, identify existing and emerging needs, and fashion plans to assure that those requirements will be met and that communities will be able to reproduce and revitalize themselves continuously. By this definition, built environments become more livable; ecosystems become healthier; economic development becomes more responsive to the needs of place rather than furthering the profits of a powerful few; and the benefits of improved environmental and economic conditions become more equitably distributed. [8] Planning for reproduction seeks to ensure the community's capital stock is passed on to future generations; that what is valued persists.

3.3 Sustainable Communities and Municipal Services Development

[1] Gran, G.. "An Annotated Guide to Global Development: Capacity Building for Effective Social Change." (University of Pittsburgh Economic and Social Development Program: 1987).
[2] Hanna, "Planning for Sustainability."
[3] Ibid.
[4] Mog, "Struggling with Sustainability." p. 2141
[5] Berke and Conroy, "Are We Planning for Sustainable Development?" p. 22
[6] Anthony F.C. Wallace, "Revitalization Movements" *American Anthropologist, New Series* 58 (2) (1956): 264-281.
[7] Callaghan and Colton, "Building Sustainable and Resilient Communities."
[8] Berke and Conroy, "Are We Planning for Sustainable Development?" p. 22

The focus of the sustainable community literature has focused on the economic core, especially Europe and North America that have comparatively high levels of economic and institutional capital. Populations in the economic periphery face different challenges. The common perception is that communities in the economic core are unsustainable and those in the periphery are underdeveloped.[1] This dichotomy is illustrative rather than absolute; there are underdeveloped populations in the core and unsustainable populations in the periphery. From a strong sustainability perspective, all communities face the challenge of meeting society's needs without reducing natural capital. This already considerable challenge is amplified by the lack of social, human, institutional, political, and economic capital faced by many on the global economic periphery.

The goal of the Peace Corps Municipal Development Service program was to work with Paraguayan municipalities to "increase their capacity, quality, and citizen participation in responding to community needs."[2] It is an institutional capacity, or institutional capital, building project aimed at improved municipal governance, especially concerning the provision of basic services such as adequate shelter, potable running water, reliable electricity, passable roads, sanitary sewers, and solid waste disposal. In this view, the challenge of sustainability becomes building institutions capable of entering into the 'dynamic process' of sustainability planning with their community to develop these (and other) essential public services without depleting natural capital.

3.4 *Institutional Capacity Building for Community Sustainability Planning*

Paraguay's municipalities have demonstrated little capability to provide essential public services to large swathes of the nation's population, or to protect natural capital within their boundaries. For the past four generations, resources have been tightly controlled by the Paraguayan state via the dictatorship and Colorado party; which hegemonically dictated municipal leadership, policy, and activities. As noted above, with the collapse of the dictatorship, and the ensuing loosening of Colorado domination, Paraguay has now entered into a program of decentralization to promote the delivery of public services. Part of this initiative has sought to expand the scope of sub-national government's public service delivery mandate. Municipalities had long served a small role in governance, while the central government was principally responsible for public service delivery.

This decentralization effort was driven by a belief that Paraguay's highly centralized government had failed to secure development in the country's interior adequately. Decentralization rests on the assumption that local authorities are more knowledgeable of, and responsive to, the needs of the population in their respective towns and states than a national government can be. During the dictatorship Paraguayan institutions (apart from church, family, and football clubs) remained weak and ancillary to the centralized Colorado Party power structure. Given this legacy, many Paraguayan municipalities do not possess the institutional capacity to govern effectively and civil society groups and organizations have not developed the institutions or capacity to provide oversight and demand action of public entities. During the dictatorship, local governments were starved of material, intellectual, social, and political capital; the essential building blocks of

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[1] Roseland. "Sustainable Community Development."
[2] Peace Corps Paraguay, "Peace Corps Municipal Services Development Work Plan" (2009).

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institutional capacity. To reach the goal of community sustainability planning it is critical to increase institutional capacity to realize municipal ability to provide needed public services and prevent the depletion of natural capital.

Institutional capacity building has been the Peace Corps' strategy for increasing municipal service delivery, financial management, and decision-making effectiveness.[1] Institutional capital or capacity is a nascent concept in the development discourse. Like sustainability, no consensus definition of institutional capital exists. Innes and others have defined institutional capital "as interactive governance assets constituting intellectual capital (knowledge resources), social capital (stock of trust and relationships) and political capital (capacity to act collectively)."[2] To clarify the conceptualization of institutional capacity employed here, its component concepts of institutional capital (intellectual capital, social capital, political capital) are further developed below.

Intellectual capital refers to "the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community or professional practice."[3] It is knowledge capacity. Intellectual capital encompasses the range of understanding required for developing a broad array of policy approaches and reasoning about issues and the importance of local actions. Social capital, previously defined as "corresponding social trust and interconnecting networks of communication that cause an increase in productivity" is seen as critical to developing intellectual capital.[4] Intellectual capital is the knowledge base of an organization, the collective human capital of all the institution's component members.

Political capital implies commitment and willingness among not only politicians and government officials, but also among citizen movements and stakeholder groups, to shape agendas and take specific actions. Building political capital is based on mutual trust and respect among all those involved and is necessary for building consensus, influencing policy, and mobilizing resources.[5] The capacity to act collectively in many policy areas implies a challenge to change established ways of doing things. Effective mobilization can help collective action in the face of established power structures. Institutional capacity to govern is affected by this agglomeration of the intellectual, social, and political capital; and critically, the material capital to implement action. The municipality of Areguá has a mandated responsibility to plan for growth and development, requiring institutional capacity to engage in the dynamic process of community sustainability planning. This paper investigates one attempt to build the capacity necessary to address that responsibility.

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[1] Peace Corps Paraguay, "Peace Corps Municipal Services Development Work Plan" (2009).

[2] Khakee, "Assessing Institutional Capital Building." p. 54

[3] Janine Nahapiet and Sumantra Ghoshal. "Social Capital, Intellectual Capital and the Organizational Advantage." *Academy of Management Review*. 23(2) (1998): 242-266.

[4] Ibid.

[5] Khakee , "Assessing Institutional Capital"

4. Research Approach and Methodology

This section reviews the participatory research methods adopted to build Areguá's capacity to engage in the dynamic process of community sustainability planning, exploring how a project team applied those participatory research methods, and their utility in a municipal services development project. The research approach incorporated a blend of participatory field research techniques, which were adopted because of Peace Corps' commitment to those strategies. Community participation is fundamental to building the social, political, and intellectual capital necessary to effect sustainable community planning. A key component of the definition of the community sustainability planning framework adopted for this paper is the goal of achieving balance in the dynamic process of planning for community change. Balance is achieved through broad-based community participation in the planning process. Achieving integration between social, economic and ecological goals requires an open and challenging process of communication, negotiation, and compromise among the citizenry.[1] Therefore, engaging in meaningful participation with community members and other stakeholders is a fundamental requirement of sustainable community planning.[2]

This project employed a diversity of participatory research approaches to address the variety of contexts in which inquiry occurred. Differing research methods were applied concurrently based on the circumstances encountered. The variety of methods used resulted in a larger data set than might otherwise have been obtained, providing a more complete description of the community's context and its emerging vision for the future. The participatory methods employed included participant observation, participatory analysis for community action, participatory action research, and participatory design charrettes.

4.1 Participant Observation

Participant observation was developed as an ethnographic/social anthropology fieldwork technique. The researcher works with and in a community, learning the locality's language and beliefs through direct participation and observation. The observer records various perspectives from within the community and analyzes relationships among its principals and those perspectives. The research is conducted in the subjects' environment: "recording contexts, ideas, norms, and events; and people's behaviors and activities—what they do, how frequently, and with whom."[3] This approach enables researchers to develop a nuanced familiarity with the community that only comes through engaged experience. Nonetheless, it is inherently subjective and time-consuming.

Peace Corps service is ideal for participant observation research. Peace Corps' two years of volunteer service allows for sufficient time to integrate into the local society, an underlying requirement in participant observation research. The Peace Corps advocates community-based

[1] Maria Manta Conroy and Philip R Berke, "What Makes a Good Sustainable Development Plan? An Analysis of Factors that Influence Principles of Sustainable Development," *Environment and Planning A* 36 (2004): 1381-1396.
[2] Joanne Tippett, John F. Handley, and Joe Ravetz, "Meeting the Challenges of Sustainable Development: A Conceptual Appraisal of a New Methodology for Participatory Ecological Planning," *Progress in Planning* 67 (2007): 9-98.
[3] Natasha Mack and others, "Participant Observation" *Qualitative Research Methods: A Data Collector's Field Guide.* Family Health International. Research Triangle Park. (2005) p. 14

and grassroots development principles. Volunteers are expected to adapt to the lifestyle of their host communities. They must learn the language, adopt local customs, and generally lead the everyday life of community members. Before being placed in host communities, volunteers undergo twelve weeks of intensive language, technical, and cultural training. During this period and the first several months of service, volunteers live with local families to help foster their integration into the culture of their ne adopted home. This Peace Corps pre-service training provides excellent preparation for participant observation research as the program's mandated language and cultural learning facilitate integration with the host community.

I gathered participant observer data in Areguá from August 2007 to August 2009 through work in the Peace Corps' Municipal Services Development sector. The information included an ongoing fieldwork notebook, quarterly reports to Peace Corps, notes from meetings, and work products. During this time, I conducted research within the municipality, participating as a civil servant in the Works and Services Department. The work provided an opportunity to witness firsthand the day-to-day administration of Areguá's municipal government as well as to interact with colleagues whose responsibility it was to improve the locality's service delivery. After several months of work in the Works and Services department, I expanded my research scope to include collaborations with the municipal Environment and Sustainable Development (SADES) and Neighborhood Commissions departments.

After approximately half-a-year working exclusively with the local government, I expanded my scope of interest once again to include local civic groups and motivated citizenry interested in participating in the municipality's governance. I conducted meetings and conversations with a broad cross section of Areguá's citizenry, from destitute squatters to landed elites.
These experiences and the data gathered as a participant observer informed the Peace Corps' Municipal Services Development Project effort in Areguá. By holding hundreds of conversations with dozens of community members, and participating in innumerable community meetings, I garnered a wide variety of views on Areguá's context and its resident's vision for its future. I recorded this information in contemporaneous field notes in journals and that record was later employed to help to shape community planning efforts by providing intimate knowledge of the political and social relationships within and outside of the municipality. This understanding of the community's socio-political context allowed me to concentrate on building institutional and community capacity to engage in community sustainability planning where my efforts would likely prove most effective.

4.2 Participatory Analysis for Community Action

Peace Corps Paraguay trains volunteers in Participatory Analysis for Community Action (PACA) research methods. PACA is a set of problem-solving tools that community development workers use to guide groups of community residents in assessing and ranking needs, and implementing and evaluating projects.[1] PACA is age and gender sensitive and can be used to facilitate a process in which women, men, girls, and boys engage in analysis and decision-making about what they want to change in their community.[2] The Peace Corps' Women

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[1] CHP, "Participatory Analysis for Community Action: Pre Service Training Manual" (2007).

[2] Peace Corps. *The New Project design and Management Workshop Training Manual*. (Washington: Peace Corps, 2003).

in Development Office initially developed the approach under a Gender and Development Training Initiative in 1996.[1] PACA grew out of requests for materials that could address, simultaneously, the need for tools to use in community development, urban and rural appraisal, gender, and socioeconomic analysis. PACA was developed to provide intuitive and participatory strategies to facilitate grassroots community development. PACA tools also help build partnerships between Peace Corps volunteers and residents while strengthening groups and leaders within communities.[2] These strategies seek to promote participation, and engage consensus-building efforts as well as promote discussion, collaboration, dialogue, and transparency.[3] They are designed to be accessible and comprehensible to people with little formal education.

One PACA tool is the community mapping exercise. When this strategy is employed, residents convene to draw a map or maps depicting information such as infrastructure, businesses, public squares, forests, lakes, factories, and other locations they deem important in their community. They consider needs and resources and discuss rights of access to existing resources. They are prompted to discuss what they would like to see in their community that is not currently on the map, and alternatively what they would wish to remove from their community. This exercise reflects the community's perceptions and can serve as the starting point for a larger program of participatory sustainability planning.

PACA is an outgrowth of the Rural Rapid Appraisal methodology, which was developed by Peace Corps in response to the perceived weaknesses of more traditional quantitative research methods: the time taken to produce results, the high cost of formal surveys, and the low levels of data reliability.[4] For its part, Rural Rapid Appraisal drew criticism for not being sufficiently participatory, but instead an extractive, externally driven process, compelled by the researcher.[5] In Participatory Rural Appraisal (PRA), by contrast, the research is shared and owned by the local population, not the researcher.[6] Participatory Analysis for Community Action grew out of PRA and allowed the researcher to address non-rural communities. PACA shares PRA's aim of identifying community problems and implementing solutions with the active participation of community members.[7]

PACA tools were used in meetings with neighborhood commissions in their communities, to encourage community participation in the analysis of needs, and to encourage ownership of solutions. When neighborhood commissions request assistance the expectation is that the municipality will come and solve the identified problems. This attitude is not surprising given

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[1] Ibid. Peace Corps

[2] Ibid.

[3] CHP "Participatory Analysis"

[4] Food and Agriculture Organization, "Marketing Research and Information Systems Marketing and Agribusiness Texts - 4" (1997).

[5] International Institute for Sustainable Development, "Participatory Research for Sustainable Livelihoods: A Guide for Field Projects on Adaptive Strategies," available at www.iisd.org/castguide/RapidRuralAppraisal.htm (October 2009).

[6] Robert Chambers, "The Origins and Practices of Participatory Rural Appraisal," *World Development* 22 (7) (1994): 953-969.

[7] Elisabeth Kvarnstrom and Jennifer McConville, "Sanitation Planning: A Tool to Achieve Sustainable Sanitation?" Huber International Symposium in Berching- Germany September 27-28th 2007 "Water Supply and Sanitation for All."

Paraguay's culture of clientelism and paternalism. To combat this, the municipal Department of Neighborhood Commissions sought to provide these groups the tools needed to develop their own strategies.

After training the municipal Department of Neighborhood Commissions employees in PACA tools, the Department adopted PACA as a strategy to teach neighborhood commissions project planning, management, and evaluation. When assistance is requested a municipal representative trained in PACA techniques and principles meets with the neighborhood commission. They are taught a variety of PACA tools so they are able to analyze and address their own problems and issues. These include community mapping, past, present and future maps, problem/solution matrices, timelines, conflict matrices, SWOT analysis (Strength, Weakness, Opportunity, Threat), action plan matrices, and project flow diagrams.

PACA tools are often initially greeted with skepticism, but are designed to be enjoyable activities that require creative thinking, dialogue, and active participation. Typically, once the markers and oversized sheets of paper come out to begin an exercise, fatalism and conformity usually fall away, and participants take to the process with enthusiasm. PACA tools provide excellent community source data, not only for academic research, but also, and primarily, for the community groups to use themselves. PACA aims to encourage empowerment, breaking the professional monopoly on information, by respecting local intellectual and analytical capabilities. PACA tools provide data on what is valued locally and create an inclusive vision of the future; an important component of sustainable community planning.

4.3 Participatory Action Research

Participatory Action Research (PAR) is an emergent research methodology in the social sciences.[1] It is an inclusive form of inquiry often practiced in cross cultural settings[2] that differs from other research methodologies in its practice-as-inquiry approach; those employing it seek to find solutions to concrete problems and conflicts. Action research seeks to serve as a basis for societal change. Participatory research emphasizes transformative structural change in the research process, with the community controlling the inquiry. PAR is a synthesis of the action research and participatory research approaches.[3]

PAR differs from PACA in that it moves further away from outside professionals facilitating the research process. PAR seeks to work directly with local political and social groups to develop, clear and verifiable organizational structures, effective local advocacy, and durable change in power relations.[4] The International Institute for Sustainable Development lauds that if PAR can "address honestly the long-term choices that must be made on resource utilization, it has perhaps the most potential of all the methods described (Participant Observer, Rapid Rural Appraisal,

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[1] N. Khanlou and E. Peter, "Participatory Action Research: Considerations for Ethical Review," *Social Science & Medicine* 60 (2005): 2333-2340.

[2] Ibid.

[3] Maggie Walter, "Participatory Action Research." In Maggie Walter, ed., *Social Research Methods* (Oxford University Press, 1998).

[4] International Institute for Sustainable Development. "Participatory Research for Sustainable Livelihoods: A Guide for Field Projects on Adaptive Strategies" available at www.iisd.org/casl/caslguide/PAR.htm. (October, 2009)

Participatory Rural Appraisal) to secure the resources for sustainable livelihoods."[1] PAR moves away from the idea of outside experts coming into the community to examine, theorize, and propose solutions. It insists on shifting power from the researcher to the community, allowing residents to become the owners and drivers of the investigative process.[2]

Not only does the community own the research generated by the the PAR process; it is guided by a topic or question that emerges from residents.[3] PAR seeks to change society and learn from the consequences of that change, and is contingent on authentic participation.[4] PAR is not a single research method. Rather, it is a research methodology and there is no single way to practice it.[5] Each researcher adopts their own blend of Participatory Research and Action Research principles creating their own strategy of Participatory Action Research with the community. While most typically qualitative, the research can involve quantitative, or hybrid data gathering methods too, depending on a community's research goals.

Traditional research methodologies follow a linear, positivist, hypothesis-fieldwork-analysis-conclusion model. PAR, in contrast, employs a cyclical research model. PAR develops a cycle of situation diagnosis, action to improve that scenario, measurement and observation of the action, followed by reflection/diagnosis of the circumstance (See Figure 4.1[6]). This sequence seeks to establish self-appraising communities of people participating and collaborating in research, which enlightens and emancipates them through their engagement. These cycles start small and work toward more extensive patterns of change.[7] PAR involves the community in theorizing about its practices, and then putting those strategies, ideas and assumptions to the test by gathering evidence for their substantiation; a cyclical process of continued research.[8] For PAR to succeed it requires that community groups record their activities, practices, discourses, organization form, and the "development of their action research."[9] This documentation is later presented to and reflected on by the community; and the cycle of research begins anew with further situational diagnosis.

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[1] Ibid. iisd

[2] Maggie Walter, "Participatory Action Research".

[3] Ibid. Walter

[4] Robin McTaggart, "16 Tenets of Participatory Action Research," The Third World Encounter on Participatory Research. (1989) The Caledonia Centre for Social Development, available at www.caledonia.org.uk/par.htm (October 2009).

[5] Walter, "Participatory Action Research."

[6] Yoland Wadsworth. "What is Participatory Action Reseach?" *Action Research International.* Southern Cross University Press: New South Wales (1998). Available at: www.scu.edu.au/schools/gcm/ar/p-ywadsworth-98.html (October 2009)

[7] McTaggart, "16 Tenets."

[8] Ibid.

[9] Ibid.

Figure 4.1
Conventional, Simple, and Cyclical Research Processes
Source: Adapted from Yoland Wadsworth. "What is Participatory Action Reseach?" *Action Research International.*
Southern Cross University Press: New South Wales (1998). Available at: www.scu.edu.au/schools/gcm/ar/p-ywadsworth-98.html

Conventional Research Process
and the Cyclical Reseach Process

Conventional Research Process

Hypothesis   Fieldwork   Analysis   Conclusions

Start   Stop

Simple Research Process

Plan to Seek Answers

Raise a Question

Intensive Seeking of Answers-checking and Challenging of Hunches ("Fieldwork")

Stop and Reflect on Current Actions

Reflection ("Analysis")

Think of New Actions

Cyclical Reseacrch Process

Question

Fieldwork

Reflect

Analysis

New Actions

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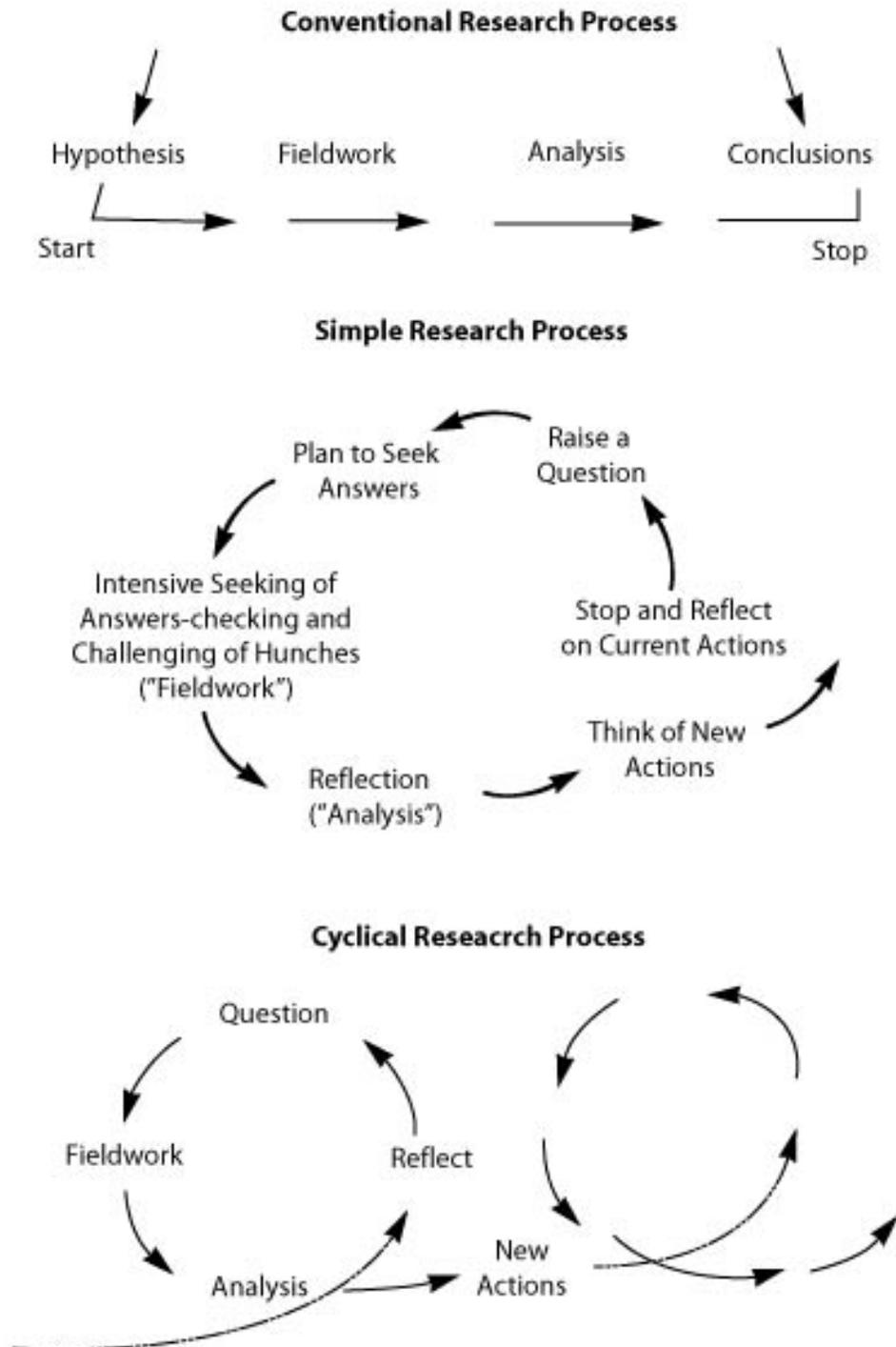
The *Consejo Districtal Ambiental de Areguá* (CDAA: Areguá District Environmental Council) adopted the PAR methodology as a vehicle for achieving sustainable development. The CDAA was formed to provide support for the work of the municipal Department of Environment and Sustainable Development (SADES). The CDAA and SADES sought assistance from the Peace Corps' Municipal Services Development project in Areguá to aid in organizational development. They had become aware of the work undertaken by the neighborhood commissions and their successful use of PACA tools. PACA instruments are useful in organizing groups that have a finite focus, such as paving a road or improving a neighborhood's *plaza.* Larger and more complex generalized issues, such as improving the local environment, cannot be easily tackled by PACA tools. PACA tools break down big problems into digestible bits, but do not tackle larger socio-political structures. Therefore, a program of Participatory Action Research was recommended by the Peace Corps volunteer to drive the CDAA and SADES efforts to improve Areguá's environment.

After exploring the potential, pitfalls, and methodology of Participatory Action Research, the CDAA decided to adopt the methodology to address Areguá's environmental problems. They sought to use PAR to identify environmental issues, propose solutions, put those proposals into action, and evaluate the results that followed. The CDAA identified several environmental problems in Areguá including the pollution of Lake Ypacarai from sewage infiltration into the watershed, lack of solid waste disposal services accessible to all citizens, and degradation of protected areas. The CDAA then proposed a series of projects in concert with the municipality of Areguá to address these environmental concerns and worked towards implementation, monitoring and evaluation of the posited efforts. The PAR process is inherently political as one of its key aims is community empowerment. The Peace Corps Municipal Service Development project's role was not to guide decision-making, but to facilitate the research process. The CDAA, as part of its PAR process, decided to hold Participatory Design Charrettes to investigate Areguá's context, and capture its citizen's dreams for the future.

4.4 Participatory Design Charrettes

The term "Charrette" derives from the French word for "little cart." A small cart was sent around to collect final exam drawings for the Ecole des Beaux-Arts at the end of the 19th century; as the cart went along, students would comment on the works and last minute additions or changes would be made.[1] The word was adapted to the concentrated activity and collaborative process of today's Participatory Design Charrette (PDC). The PDC is a community participation approach that integrates design and social science within the context of an intensive problem-solving workshop.[2] It is a demanding in-person process carefully structured to bring various segments of society into consensus within a short time period.[3] An inter-disciplinary design team creates a vision for the future and a complete and actionable plan with the community's full participation and involvement.

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[1] Henry Sanoff, *Community Participation Methods in Design and Planning* (Hoboken, New Jersey: Wiley, 1999).
[2] Sharon E. Sutton and Susan P. Kemp, "Integrating Social Science and Design Inquiry through Interdisciplinary Design Charrettes: An Approach to Participatory Community Problem Solving," *American Journal of Community Psychology* 38 (3-4) (2006): 125-139.
[3] Jerome C. Glenn, "Participatory Methods." In Jerome C. Glenn and Theodore J. Gordon, eds., *Futures Research Methodology 3.0* (New York: The UN Millennium Project, 2009).

A Participatory Design Charrette is simultaneously a product and a process.[1] The process is a useful goal-setting technique with the following two main objectives:

1) *To gain the unified support of a representative cross-section of citizens who are committed to implementing the proposed solutions.*
2) *To obtain the commitment of the power structure to secure the necessary resources in order to effect the changes identified as necessary.[2]*

The strategies for meeting these objectives include: defining a common goal, extensive community participation, maintenance of the sense of individual contribution to the process, and conflict resolution.[3] The key to a successful outcome of a PDC is a commitment to put the recommendations of the Charrette into action. PDCs can be used as a method in Participatory Action Research; engaging the community in inquiry, or systematic investigation, and providing tangible outcomes.[4] This method was adopted to shape community planning efforts in Areguá and increase citizen input in the planning process.

There are nine specific strategies that differentiate PDCs from other participatory planning methods.[5] Lennertz has identified them as the following:

1) *Work collaboratively: The Charrette plan is envisioned and authored by all who participate.*
2) *Design cross-functionally: all design work must be done concurrently by a cross-functional team.*
3) *Use design to achieve a shared vision and create holistic solutions: Drawings help illustrate the complexity of the problem and can be used to resolve conflict.*
4) *Work in detail: True buy-in can only be achieved by designing in detail; critical issues are brought to the surface and addressed.*
5) *Constrain work schedules: Time compression facilitates creative problem-solving by accelerating decision-making and reducing time consuming negotiations.*
6) *Communicate in short feedback loops: Regular stakeholder input and reviews quickly build trust in the process and foster understanding and support of the product. A feedback loop includes a design's proposal, review, change, and re-presentation for further review.*
7) *Work at least four to seven consecutive days: Four days are required to accommodate three feedback loops which allow participants time to change their prospective.*
8) *Work on site: Makes participation easier and provides the necessary access to stakeholders and information.*
9) *Produce a buildable plan: plans that sit on the shelf only contribute to citizen apathy.[6]*

These strategies are part of the overall design of the charrette process, which includes research, education and preparation, holding the Charrette, and implementation of its recommendations.[7]

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[1] Sanoff, *Community Participation Methods*.

[2] Ibid.

[3] Ibid.

[4] Sutton and Kemp, "Integrating Social Science and Design Inquiry."

[5] Bill Lennertz, "The Charrette as an Agent for Change," *New Urbanism: Comprehensive Report & Best Practices Guide 3rd Edition* (Ithaca: New Urban Publications, 2003).

[6] Ibid. p. 123-124.

[7] Urban Design Associates, *The Urban Design Handbook: Techniques and Working Methods* (New York: W.W. Norton & Company, 2003).

The *Consejo Districtal Ambiental de Areguá*, the municipal department of Environment and Sustainable Development and the town council sought to create a Master Plan for Areguá. Areguá had a land-use plan to guide development, but lacked a comprehensive, plan for the future of Areguá's development. A master plan seeks to guide inclusive long-range growth and development of a community or region. It includes analysis, recommendations, and proposals for the community's population, economy, housing, transportation, community facilities, and land use. It is based on public input, planning initiatives, existing development, physical characteristics, and social and economic conditions.

The CDAA and the municipality held a Participatory Design Charette in the second week of September 2008 to shape Areguá's *Plan Directivo* (Master Plan). The pre-Charrette analysis began with creating base maps. To this map layers were created for land-use ordinances, natural resources, historical sites, orthographic photos, streets, sidewalks, building footprints, and public spaces. This data was gathered from existing sources as well as through measurements and photographs.

The Charrette was an open process that invited residents, municipal employees, civic groups, students, and other participating agencies to help to produce an illustrated master plan that reflected goals for Areguá's development. The Charrette was composed of a pre-Charrette situational analysis, three onsite public evening workshops, three open morning work sessions (held in the municipal salon), concluding with a final synthesis workshop on Saturday at the municipality. The Charrette was held in three neighborhoods to maximize participation and community input in the formulation of the Master Plan. Charrette sessions convened in the neighborhood chapels, a focus of the social life of the community, and in areas that would be affected by their results. In conformity with Paraguayan expectations of a community meeting the workshops were conducted in the early evenings and *merienda* (Paraguayan tea time) and the municipality provided snacks and drinks.

The workshops were conducted to capture Areguá's vision for its future. The process began on Monday, and each session began with an explanation of the process and the goals of the effort. This was followed by time for the community to break into groups by neighborhood or street and draw a community map. Participants then took a break before returning to add to the map what they would like for the future of their community. The morning sessions were dedicated to capturing these inputs and expressing them clearly and graphically. These steps closely resembled a PACA process; but differed in their scope and purpose. PACA seeks to empower local groups to respond to their own challenges while Charrettes seek to capture the community's vision for its future. On Saturday these differing visions, along with the analysis of Areguá's context, were presented to the community and municipality. The design team discussed and drew conclusions based on the community's inputs and options.

This research was incorporated into a document and presented to the department heads, mayor, and town council. The CDAA wrote a convention and sent it to the town council to be adopted as the basis for Areguá's master plan. The research developed was community-driven and owned. To communicate the vision created by the Participatory Design Charrette, the work products of were placed on display in the municipality. By using a variety of research techniques different

insights were gained into what community sustainability planning meant when applied to the context of Areguá. The results of the research were influential in shaping Municipal Services Development project design, the vision for the future the Charrette captured was referenced frequently in the CDAA's Participatory Research process.

4.5 Analysis of the Data Collected and Community Sustainability Planning

Each research approach entailed different expectations for the sort of of datait would generate,, who would collect that information and how they would do so as well as for what purposes information was to be gathered. Participant observation data included: my field notebooks, quarterly reports to Peace Corps, notes from meetings, and work products (including maps, documents, and correspondence). I collected and analyzed this data to get a better understanding of my context and the social interactions amongst all of the individuals and organizations I interacted with during my Peace Corps service.

This data gave me an in-depth understanding of Areguá's context unavailable outside of the realm of personal experience; an understanding that allowed me to approach the challenge of community sustainability planning in an informed and nuanced way.

As already noted, Peace Corps places an emphasis on Participatory Analysis for Community Action (PACA) research and sought to use it in Areguá to spur positive changes within the community. The research was directed through the auspices of the municipal Department of Neighborhood Commissions. I worked with the department to reach out to neighborhood commissions that requested municipal assistance in developing small projects for their communities. I trained commission members in the use of a variety of PACA research tools both in the municipality and in the field. As outlined above, these tools included: community mapping, past, present and future mapping, problem/solution matrices, timelines, conflict matrices, SWOT analysis (Strength, Weakness, Opportunity, Threat), action plan matrices, and project flow diagrams. This research contributed to the goal of community sustainability by collecting neighborhood level data concerning their vision for the future of their communities. Community participation in the planning process is a requisite to community sustainability planning.[1]

Participatory Action Research was employed by the Areguá District Environmental Council (CDAA) to organize its efforts to engage in community sustainability planning. The data the Council collected took a variety of forms including meeting minutes, project proposals, budgets, monitoring, and evaluation plans. The CDAA sought to capture and record all of its activities as part of the Participatory Action Research process. My role was to train the members of the CDAA in Participatory Action Research methods. Additionally, I participated in the CDAA as a non-voting member in their organizational research process and contributed to the development of the CDAA's portfolio of projects. The research contributed directly to Areguá's sustainability by build the human capital needed to engage in community sustainability planning efforts.

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[1] Ibid. Conroy and Berke

Areguá's Participatory Design Charrette took input from community members and created graphic representations of preferred visions of Areguá's future. These images were developed on the basis of data collected prior to the Charrette including: maps of land-use ordinances, natural resources, and historical sites; orthographic photographs; information on streets, sidewalks, building footprints, public spaces; photographs, measurements, and drawings. I participated in the collection of the information used in the preparation, the coordination, and execution of the Participatory Design Charrette. This contributed to the goal of sustainability in Areguá by building the capacity to engage in community sustainability planning, capturing the community's vision for its future, and inviting community participation in the planning process

5. Project Description

5.1 Project Background

Paraguay is a nation in transition as it attempts to shift away from its long tradition of authoritarian and highly centralized governance. Paraguay's program of decentralization began with the post-dictatorial 1992 Constitution which proclaimed Paraguay as a "Unitary, decentralized state" and recognized municipal autonomy. However, as argued above, after 1992, little progress was made to move away from Paraguay's centralized governance structure for nearly a decade. Paraguay's institutionalized klepto-clientelist socio-political system stalled decentralization reform, as such change interfered with the 'rents' collected by federal politicians from their local underlings. As a result, political elites exhibited little interest in transferring power or funds to sub-national governments.[1]

At the beginning of 1999 Paraguay's political situation grew tense: Vice President Argana was assassinated, and the President was implicated, impeached, and exiled. In March of that year, eight anti-government student demonstrators were gunned down by snipers at a pro-democracy demonstration in the public square in front of the Congress building. As a result of the unrest, a coalition government was formed and a new president was appointed. The resulting government sought to institute neo-liberal reforms during this period, including the promotion of decentralization.

In this context and at the request of the Paraguayan government, Peace Corps Paraguay launched its Municipal Services Development project in 1999 to build institutional capacity for effective municipal governance. The project's stated purpose is to attain "an improvement in local government, an increase in their capacity, quality, and citizen participation in responding to community needs."[2] The project seeks to improve municipal public services, financial management, and income development of an active civil society. The project work-plan has three goals and nine objectives related to improving municipal service delivery and governance. (See Table 5.1)

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[1] Brian Turner. "Paraguay as a Decentralized Unitary State: What Does it Mean?" Paraguay's Institutional Development: Five Years After the Constitutional Convention. Delivered at Latin American Studies Association, Continental Plaza Hotel, Guadalajara, Mexico, April 17-19, 1997.
[2] Peace Corps Paraguay. "Peace Corps Municipal Services Development Work Plan" 2009.

Table 5.1
Peace Corps Municipal Services Development Work Plan
Source: Peace Corps Paraguay. "Peace Corps Municipal Services Development Work Plan" 2009

1) Goal: Local governments will increase the type, scope, quality, and efficiency of public services by improving their planning, management, and evaluation practices.
Objectives:
> *a) Volunteers will teach community-needs assessment tools to local government employees*
> *b) Volunteers will teach project planning, management and evaluation techniques to local government employees.*
> *c) Volunteers will teach project evaluation for implemented projects to local government employees.*

2) Goal: Local governments will improve their financial management practices by updating their revenue, expenditure, and budgetary systems and making these systems more transparent to citizens.
> *Objectives:*
> *a) Volunteers will teach computer applications to local government employees.*
> *b) Volunteers and their Counterparts will recommend improvements to the local government's revenue, expenditure, and budgetary systems.*
> *c) Volunteers and their Counterparts will recommend methods of increasing the transparency and community involvement in the collection and use of resources in local government.*

3) Goal: Citizens and community organizations will increase their participation in local government decision making by improving their ability to organize into groups, plan and manage projects, and monitor governmental activities.
> *Objectives:*
> *a) Volunteers and their Counterparts will inform citizens in community organizations about their opportunities, rights, and responsibilities to participate in local governmental activities.*
> *b) Volunteers and their Counterparts will teach new community-needs assessment tools to citizens in community organizations.*
> *c) Volunteers and their Counterparts will train citizens in community organizations in organization, coordination, planning, financial management techniques, and evaluation tools.*

The Municipal Services Development project purpose, goals, and objectives are guided by the declared United States' policy for Paraguay; the "primary U.S. goal in Paraguay is to develop a self-sustaining democracy."[1] The United States is emphasizing reform and governance practices improvement including more "transparent, participative decision-making; open clear government management practices; a strong, active civil society; improved and responsive delivery of public services."[2] Thus the project aims to improve municipal capacity to govern in order to improve both democracy and public service delivery.

Paraguayan municipalities have statutory governance responsibilities outlined in the nation's municipal organic law, Law 1294/87:
  A) The welfare of the local community and its material, social, and cultural development;
  B) The protection of the health and the security of the people;
  C) The promotion of civic mindedness and solidarity among neighbors; and
  D) Cooperation with other Municipal Offices and entities for the completion of public works

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[1] USAID. "USAID Paraguay Strategic Plan" available at Paraguay.usaid.gov/strategic_plan.htm#1 (October 2009)
[2] Ibid USAID

and in the collective interest, and within its specific goals.

Following these general objectives the law outlines specific municipal functions in Article 18 including "the establishment of urban and rural physical planning system of the municipality."[1] Additionally, Article 32 calls for establishment of a standing assessment commission for physical and urban planning; akin to planning and zoning boards in the North American context. The framers of Paraguay's municipal organic law recognized the value and role of urban planning in delivering critical public services.

Urban planning can play a crucial role in assuring effective public service delivery, improving municipal financial management and increasing citizen and securing community participation in local government decisions.[2] This is especially true in areas of high urban growth, such as Areguá, where adapting to the rapid pace of change requires proactive and anticipative problem solving. Unfortunately, traditionally, Paraguayan municipalities have tended to adopt a reactive problem solving approach, addressing concerns only as they arise. Municipalities do not have the capability to uphold the law regarding their urban and physical planning duties. In response to this deficiency in municipal governance, Paraguay's rapid population growth, urbanization, social, and environmental challenges SEAM (*Secretaría del Ambiente*: Secretary of the Environment, the national environmental secretary) and BGR (Bundesantalt für Geowissenschaften und Rohstoffe: Federal Institute for Geosciences and Natural Resources, Germany) launched the ORDAZUR (*Ordenamiento Ambiental de Zonas Urbanas*: Land-use Planning of Urban Zones) project.

The ORDAZUR project was initiated in 2002 to aid in the sustainable management of Paraguay's natural resources. According to project documents, the ORDAZUR aims to encourage "the rational use and protection of natural resources in urban areas through the development of land-use planning instruments and strategies."[3] The central focus of the effort "is the elaboration of thematic maps, research procedures, and evaluation of natural resources."[4] ORDAZUR was undertaken to study urban environmental impacts and implement that research into a land-use planning program.[5]

The ORDAZUR project collaborates with select municipalities and departmental governments to put the concepts of environmental land-use planning into practice. The municipalities involved include Areguá, Caaguazú, Coronel Oviedo, and Villarrica while the two participating departments are Caaguazú and Guairá. The project has three action lines: building SEAM's technical and institutional capacity to regulate, providing technical assistance to participating municipalities, and identification of sites for sanitary landfills. The project team reported three project results. First, the *Secretaría del Ambiente* improved regulatory and technical capacity in environmental planning in urban areas; second, municipalities in the project area are better able to manage concepts and practices of municipal planning; finally, participating municipalities

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[1] Ley N° 1294/87

[2] Alain Bertaud "The Use and Value of Urban Planning" available at alain-bertaud.com/AB_Files/AB_Transcript_1_use_urban_planning.pdf

[3] H.P. Thominski, "El Proyecto 'Ordenamiento Ambiental de Zonas Urbanas' (ORDAZUR), Paraguay" Simposio Internacional de Geologia Ambiental para Planificación del Uso del Territorio. Puerto Varas, 4-6 Noviembre 2002.

[4] Ibid Thominski

[5] Ibid Thominski

located sites for sanitary landfills. [1] The ORDAZUR project is currently active.

On the local level, municipalities participating in ORDAZUR receive technical training on how to put the concepts and principles of land-use planning into practice. The project has overseen the formation of environmental management and planning departments in the municipalities capable of using geographic information systems. The effort donated necessary hardware, software, and training to train an operator of geographic information system technology to the municipality of Areguá. ORDAZUR staff worked with the Department of Cadastre (the property tax and title department) to update a cadastral map/database based on orthographic photos to increase municipal receipts.

The land-use planning portion of the project was known as POTA: *Plan de Ordimiento Territorial Ambiental* (Land-Use Plan). Altervida, a Paraguayan environmental NGO, developed and implemented a municipal land-use plan for Areguá. . As part of the ORDAZUR project, the local government administration formed a municipal Department of Environment and Sustainable Development (SADES), which worked in conjunction with Altervida. Two international volunteers provided technical support to the project, one from JICA (Japan International Cooperation Agency) and a Municipal Services Development volunteer from the Peace Corps in 2005 (prior to my service).

Areguá was chosen to participate in ORDAZUR/POTA because it had recently been absorbed into metropolitan Asunción; and the municipality's land was being subdivided and urbanized rapidly. Areguá's growth had been unguided, indiscriminate, and speculative (the majority of lots are unoccupied).[2] Altervida was concerned with the protection of the *Yukyry* wetlands and Areguá's remnant forest, and the fragile ecosystems of Lake Ypacarai. To protect these assets the NGO lent its technical support to the land-use planning effort. The planning work was also intended to benefit the municipality by creating the possibility of more efficient and effective delivery of services to citizens.

The planning process began with a compilation of qualitative information, quantitative data, and the revision of existing local and regional plans. The project team then studied the plans of neighboring municipalities to see regional connections. Based on orthographic maps provided by the ORDAZUR project, the municipality deployed a team to create an updated cadastral map and corresponding geo-spatial database. The team went into the field and verified and surveyed the data, which served as a basis for a land-use planning map. The team then met with neighborhood commissions, the municipality, and other actors in Areguá's development, and held diagnostic workshops to explore Areguá's challenges and opportunities. These gatherings produced a neighborhood-by-neighborhood SWOT (Strengths-Weaknesses-Opportunities-Threats) matrix analysis for Areguá, a PACA tool. The project team then held a week of public meetings after draft plans had been elaborated to ensure community participation in the process. The hearings provided community feedback concerning them.

All of this information was assembled into a land-use plan with the following ORDAZUR project objectives:

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[1] Ibid Thominski
[2] Altervida. "Areguá Gestión Territorial" POTA Areguá.

1) *Order, limit, concentrate and control urban growth.*
2) *Establish and differentiate distinct zones within the municipality for different types of living, urban and rural.*
3) *Orient the location of public and private investment.*
4) *Create a hierarchy of municipal streets to improve the vehicular and pedestrian circulation; while improving public and private transportation.*
5) *Protect and value the natural and cultural heritage.*
6) *Improve environmental sanitation and that of neighboring municipalities*[1]

The POTA project team elaborated budgets, an accord, and a presentation to the municipal authorities for consideration. The municipality adopted POTA as a land-use plan with passage of Ordinance 22/03, in June of 2003. The land-use plan divided Areguá into seven urban zones and four rural zones., Altervida worked to educate the public about land-use during the annual *Audiencia Publica* or town hall meeting after the plan was adopted by the municipality. Altervida created a pamphlet describing POTA for public distribution and worked with the municipality to develop procedures and policies to implement the POTA plan. The municipal Department of Environment and Sustainable Development administered the POTA plan jointly with the Department of Works and Services, and Department of Cadastre.

In 2006, Areguá elected a new mayor. With the change of administration the director of the Department of Environment and Sustainable Development, the chief administrator and advocate of the POTA plan, was replaced. The Department of Works and Services assumed responsibility for administration of the land-use plan. In 2007, the municipal administration requested technical support from the Peace Corps to improve its institutional capacity to deliver municipal services; specifically the administration of its environmental, strategic and land-use planning capabilities. Peace Corps accepted Areguá's request and agreed to place a Municipal Services Development volunteer in the community to provide technical support to the administration for a period of two years.

Peace Corps' training for volunteers assigned to Paraguay involves an initial two-day orientation in Miami followed by twelve weeks of pre-service training in that nation. The pre-service training included cultural, technical, and linguistic education. Trainees were housed with host families in the commuter and horticultural community of J.A. Saldivar, 27 km from Asunción. Language and culture were taught in small morning classes by Paraguayan professors in both Guaraní and Spanish. The afternoon technical sessions were conducted in English. These classes presented information on project expectations, methods, law, and political structure. Training time in the field included visiting volunteers, municipalities, future host communities, and cultural sites. The training program was, contracted to, and operated by CHP International Inc. CHP's development philosophy arose from Paolo Freire's critical analysis in the *Pedagogy of the Oppressed*, and stressed adult learning as the critical element in breaking the cycle of poverty.

After trainees were sworn-in and sent to their host sites, the volunteers began work in their municipalities. Volunteers focus on integrating into their community before developing projects in conjunction with their counterparts, who typically are members of a community group or an

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[1] Ugarte, Rosa. "Actividades Municipalidad Areguá: Implementación del Plan de Ordenamiento Ambiental del Territorio" ORDAZUR. 2004 Asunción.

employee of a public institution. The first six months of service are dedicated to developing relationships and language abilities while gaining an understanding of the community where they are living. During this time volunteers are encouraged to work on Goal 1 (See Table 5.1) objectives from the project work plan, which focus on building knowledge of technical practices. Those objectives include teaching community-needs assessment, project planning, management, and evaluation techniques to local government employees.

Peace Corps' capacity building and project design methods guided elaboration of the municipal services development project in Areguá. Projects designed according to Peace Corps technical standards include the following phases: situational analysis, inventory of resources, vision of a preferred future, project design (goals and objectives), action planning (tasks, roles, and timelines), budgeting, monitoring, and evaluation. Project stages overlap and are not linear; as project environments are changing and complex. To be successful, Peace Corps project plans must incorporate flexibility. The Municipal Services Development project in Areguá was roughly divided between situational analysis, inventory of resources, vision of preferred future, and project design, action planning, budgeting, monitoring, and evaluation phases. Various participants undertook these efforts during various stages of participatory research (See Table 5.2)

Table 5.2
Research Techniques and Project Phases

	2007	2008				2009		
	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3
Reseach Technique								
Participant Observation	■	■	■	■	■	■	■	■
Participatory Analysis for Community Action			■	■	■	■	■	
Participatory Design Charrette					■			
Participatory Action Research					■	■	■	■
Project Phase								
Situational Analysis	■	■	■	■	■	■		
Inventory of Resources			■	■	■	■		
Visions of a Preferred Future Project			■	■	■	■		
Action Planning						■	■	■
Budget Planning						■	■	■
Undertaken by Whom								
Personally	■							
Municipality of Areguá	■							
Municipality and the CDAA	■							

5.2 Situational Analysis, Inventory of Resources, and Visions of a Preferred Future Project Phases

The situational analysis was conducted *in situ* using participant observation, as outlined in the research methods section above. In addition to participation observation, data was gathered and analyzed from municipal archives, published sources, the ORDAZUR project, and Altervida's

POTA. The situational analysis of Areguá began working day-to-day with municipal civil servants to improve their technical abilities. This research was supplemented with a survey identifying every request for funds that had been submitted during the mayoral administration for the two years it had been in power. Individuals, organizations, and institutions make direct requests to fund a variety of projects and needs to the municipality. The mayor holds audience with the public several times a week to hear requests. These concerns are then routed to the appropriate municipal department. The survey examined all the requests submitted to the Department of Works and Services. This information was digitized and mapped allowing civil servants working in the Department of Works and Services to track requests and gauge citizen desires for various public works.

The Department of Works and Services concerns itself primarily with the development of physical infrastructure, while the Department of Environment and Sustainable Development (SADES) attempts to preserve and restore Areguá's natural heritage. I evaluated SADES' operations in cooperation with the department. This analysis included reviewing the Department's tree nursery, demonstration wetland, and environmental education efforts. The ORDAZUR project was responsible for formation of the department and had donated the resources to get it started including a computer, Geographic Information Systems software, and training on its operation. The information used to form the POTA plan was stored on this computer and in the department's archives. While researching the POTA plan, and creating a situational analysis, I dedicated time to organizing these electronic resources and strengthening the department's ability to operate Geographic Information Systems.

Working directly with municipal employees to improve administration and skills was critical for building community capacity to engage in sustainability planning. By enhancing civil servants' expertise in community needs assessment, project planning, management and evaluation the municipality would be better able to address its challenges. All other things equal, an institution with competent human resources increases a community's support for its efforts. If a citizen has a difficult time applying for a plot in the cemetery, individuals are likely to exhibit little trust in the municipality's ability to regulate land-use more broadly. Land-use planning is an emergent concept in Paraguay, and there is little history of the government regulating land-use in a fair and open manner. Working directly with municipal employees to explore best practices in planning and project design increased the municipality's ability to engage in the dynamic process of community sustainability planning. My colleagues in the Department of Works and Services and I completed the survey of the requests for funds submitted to the Department of Works and Services and SADES and we compiled and presented our results to the department head and the mayor. The presentation of the survey spurred a drive to integrate better the operations of Areguá's Works and Services Department and Neighborhood Commissions Department.

I then began work with the Neighborhood Commissions Department to ensure community groups possessed the capacity to respond to the challenges they faced. Neighborhood commissions (*comissiones vecinales*) are groups recognized by, and that serve as auxiliary to, the *intendencia municipal* (mayor's office). Their purpose is to work together with the *intendencia municipal* in the realization of public works and the provision of basic services. These commissions typically ask the municipality for assistance in completing projects to meet the needs of their community. The municipality then sends a representative from the Department of

Neighborhood commissions to evaluate neighborhood proposed plans and inform residents of municipal funding procedures for projects.

The various commissions most often requested financial, rather than technical, assistance from the municipality. Scarce resources and the political structure of Paraguay typically saw the municipality fund commission projects of close political allies of the mayor or town council members. Even when the commissions did not receive financial support from the municipality, the community government attempted to fulfill its responsibility to work to develop residents' capacity to design, fund, and implement their own projects. Participatory Analysis for Community Action[1] techniques were employed as outlined above to assist in documenting and researching the community, its resources, and its needs.

The Volunteer employed PACA tools to develop the neighborhood commissions' capacity to engage in community-needs assessment, organization, coordination, planning, financial management techniques, and evaluation in both field and municipal offices. The Volunteer taught PACA methods in conjunction with the Neighborhood Commissions Department, which took ownership of the process after a dozen training sessions and continued working with the commissions using PACA.

The neighborhood commissions used PACA research gathered in-concert with municipal representatives to flesh out an inventory of Areguá's resources on a neighborhood-by-neighborhood basis. These research documents/tools included maps, timelines, and problem analysis matrices. Neighborhood commissions used these materials to analyze problems, identify local resources, and to create preferred visions for the future. PACA research took place within a variety of neighborhood commissions: urban and rural, large and small, in established communities and newly occupied/squatted fields. This provided an array of perspectives concerning Areguá's context, resources, and visions for its future.

This inventory of resources was supplemented by the research conducted during the situational analysis particularly, and by review of the work completed by the POTA project. POTA identified Areguá's natural heritage, tourism, horticulture, ceramics, traditional economy, historic center, and location in Central Department close to Asunción as resources. The project organized these advantages spatially to develop a land-use plan that divided Areguá into seven urban and four rural zones. Further inventory of Areguá's resources, was undertaken during the Participatory Design Charrette.[2]

The inter-disciplinary team for the Areguá Participatory Design Charrette included various members from the District Environmental Council and the municipality Council membership. It included several architects, who took part in facilitating the Participatory Design Charrette. Three architecture students from the community supplemented their knowledge. The head of the Municipal Department of Works and Services, also an architect, participated, along with the heads of the Neighborhood Commissions and SADES. The design professionals aided in capturing participant's contributions visually.

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[1] For more information on Participatory Analysis for Community Action see Section 4 on Research Methods
[2] For more information on Participatory Design Charrettes see Section 4 on Research Methods

The Charrette was divided into three distinct phases: understanding (figuring out what was going on), exploring (trying out ideas and alternatives) and deciding what to do (developing the plan).[1] The 'understanding' phase of Participatory Design Charrettes correlates to the situational analysis and inventory of resources phases of Peace Corps project design. The 'exploring' stage of the Participatory Design Charrette equates to the "vision of a preferred future" phase of Peace Corps project design. Both PACA and Participatory Design Charrettes are excellent tools for capturing the community's preferred vision for its future. The Charrette was used to create and present a preferred vision of Areguá's future while PACA research was employed at the neighborhood scale. The Participatory Design Charrette took place in various locations throughout the community to maximize participation and to gather a diversity of visions for Areguá's future. The Charrette asked three basic questions to create a vision for a preferred future and a situational analysis: what do you like best and least about your neighborhood and what is your vision for its future?[2]

The understanding phase for the Areguá Participatory Design Charrette (PDC) began by creating an accord with the municipality outlining the scope of work, planning process, schedule and the costs the municipality would cover. The local government worked on collecting raw data for the project team to analyze including plans, ordinances, historical information, demographic information, streets and traffic analysis and orthographic photos. To this base the PDC team added detailed information including architectural typographies, street patterns, sidewalks, parks, schools, and community amenities. The project group undertook measurements of street widths, intersections, rights of way, sidewalks, and lot widths to compare with the base map to ensure its accuracy. The team also created maps of Areguá's municipal and regional contexts and urban zone for the Charrette.

The 'exploring phase', was the second stage of the PDCs process (or the "preferred vision of the future," in Peace Corp terminology). That effort consisted of three parts: preparing, conducting, and documenting the Charrette. The Charrette was held in four different locations, two, Caacupemí and Areguá Poty, in the high growth areas along the highway, one rural community, Valle Pucu, and at the municipal salon in the urban center. Before the PDC's began, they were advertised with flyers in the neighborhoods via posters in high traffic areas. The three evening sessions, which were hosted outside of the urban center, were held in local chapels. These meetings were spent gathering responses to the three organizing questions noted above.[3] The open morning sessions, held in the municipal salon, were spent gathering community contributions and incorporating them into the work product. In total, approximately one hundred twenty to one hundred and fifty citizens participated in the Charrette.

The final work session held in the municipal salon also had an afternoon presentation component during which alternative visions of the future of Areguá were presented to the community. Following this presentation, the municipality and the Areguá District Environmental Council held a series of Saturday meetings to develop a final work product, incorporating and shaping the community's vision into a usable plan. The design team recorded notes at the event. The team

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[1] Ray Gindroz and others. *The Urban Design Handbook Techniques and Working Methods*. Urban Design Associates. Norton and Company: New York 2000.
[2] Ibid. Urban Design Associates.
[3] Ibid. Urban Design Associates.

used this information to generate a final report on the Participatory Design Charrette. The PDC created a community-wide and consensus-based process for developing and choosing among possible visions for Areguá's future.

The Participatory Design Charrette proved an excellent tool to guide the creation of social, political and institutional capital in and amongst the citizenry, the municipality, and the Areguá District Environmental Council. Community Sustainability Planning, as defined by Conroy and Berke, "is a dynamic process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic, and ecological systems, and link local actions to global concerns."[1] The Charrette allowed the community to address these aims by offering a space in which to pursue consensus building activities to create the balance needed between local environmental, economic, and social values. This consensus space facilitates balance through coordination, negotiation, and compromise. The Areguá District Environmental Council, worked with the municipality, and the citizenry to build capacity in community planning techniques to engage in the ongoing dynamic process of sustainable development.[2]

5.3 Project Design, Action Planning, Budgeting, Monitoring, and Evaluation Project Phases

The third phase of Participatory Charrette Design, deciding what to do (or developing the plan), equates to the Project Design, Action Planning, and Budgeting, phases of Peace Corps project implementation. Peace Corp project design also incorporates project monitoring and evaluation phases to ensure a project is proceeding according to plan. After the final report on the Participatory Design Charrette, municipal staff members and the Areguá District Environmental Council members believed they had captured the community's vision for its future. The written mission statements of both the Areguá District Environmental Council and the Department of Environment and Sustainable Development were to effect sustainable development in the municipality. With a shared vision of what a sustainable Areguá would be, they set out to create a road map outlining how to arrive there. To begin, using Participatory Research Action methods, they designed a series of small projects to address immediate environmental issues within the community. These included those steps summarized below.

5.3.1 Developing and Promoting the Artisan Production of Reed Products

The wetlands of Lake Ypacarai, despite serious contamination, produce reeds (*Paranoicosichachi sea*) that are the primary materials for small-scale crafts including mats, screens, furnishings, and other products. This work supports approximately 29 families in Areguá. These families participate in their own commission, the Fishermen, Canoeist, and Reedworkers association of Areguá, and the president of this organization is an active participant in the Areguá District Environmental Council. The project focuses on protecting and increasing the ecological services offered by the wetlands of Lake Ypacarai. If the contamination of Lake Ypacarai is ever to be abated, the preservation of the wetlands ecosystems will be critical to restoring natural bio-remediation. This initiative seeks to protect the wetlands where the reeds

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[1] Conroy and Berke, "What Makes a Good Sustainable Development Plan?" p. 22
[2] Richard D. Margerum, "Collaborative Planning: Building Consensus and Building a Distinct Model for Practice" Journal of Planning Education and Research, Vol. 21, No. 3, 237-253 (2002)

are grown, maintain the tradition of reed-related craftwork, increase the incomes of the reed-workers, and develop the lake as a tourist attraction.

5.3.2 Municipal Reforestation and Tree Planting Program

This project consists of developing a tree planting plan for urban areas and a reforestation plan of rural areas, especially in stream courses. The initiative uses fruit trees grown in the municipal nursery and plants them to provide shade and fruit (especially for Areguá's jelly making cottage industry) in public spaces including streets, plazas and parks. The project provides native trees and labor to replant stream watersheds and also plants rapid-growth native trees on land that has been set aside as a plantation for wood production to fire Areguá's ceramic kilns.

5.3.3 Project to Control Wastewater and Protect Water Resources

The health of Areguá's environment suffers from contamination of its watershed. The waste is both industrial and domestic, but this project seeks to develop a low-cost and effective program to mitigate human impacts on local water resources. The initiative seeks to protect stream courses and work with engineers and the national secretary of the environment to implement a plan of action to identify and prevent ground water contamination in aquifer recharge areas and remediate contaminated areas to ensure clean ground and surface water. The effort also includes a feasibility study for small-scale bio-digesters to mitigate the effects of sewage infiltration, while providing useable fuel and compost.

5.3.4 Botanical Garden and Park Tapaicua and Cerro Koi National Monument Enhancement Project

The town of Areguá has the privilege of a greenbelt almost completely surrounding its urban core. To the West is the lake and wetlands, to the East, North, and South are large tracts of forested land. This plan seeks to incorporate these areas into a continuous greenbelt connecting the lake with the hills to the East behind the town in a continuous public park featuring a botanical garden and recreational areas. The project attempts to create right of ways and protect the open lands surrounding the community from subdivision and development. It would delineate the urban boundary of the town for other growing communities that look likely to meld into one continuous metropolitan area. It would provide the necessary infrastructure to create an integrated park and sufficient recreational opportunities to draw visitors from surrounding areas.

5.3.5 Creation of a Master Plan for Areguá

The creation of a Master Plan for Areguá would revise the POTA land-use plan and enlargeit to include planning for additional municipal activities including: natural resources, protected areas, recreational areas, a hydraulic resources, sanitation, environmental education, tourism, economic development, historic preservation, and transportation. The project goal is to have the general plan written into law, and overseen by an elected planning body as per the mandate in Paraguay's municipal organic law. The plan is to be elaborated in cooperation with the community's ongoing participation to develop Areguá's sustainability.

5.4 Action Planning, Budget Planning, Monitoring, and Evaluation Project Phases

After the project design step was completed, the next step in the CDAA's Participatory Action Research involved laying out action plans for project implementation. Peace Corps has identified the action plan's three components: "tasks for each project objective, roles and responsibilities of the community and other project stakeholders, and the timeline for getting the project done."[1] Each project was headed by a member of the CDAA paired with a civil servant from the municipality. The CDAA held a meeting dedicated to developing the projects' action plans. The meeting began with a demonstration of the PACA time-lining tool for developing project objectives. Next, the CDAA-municipal small teams used the PACA time-lining tool to break down the projects into short and long-term objectives. Short-term objectives were then further subdivided into identifiable tasks.

In the following meeting these tasks were further divided into concrete specific activities that had to be completed to accomplish the tasks that form the project objectives. This was also done using the same PACA time-lining tool to ensure the activities were scheduled sequentially in a logical order. Once the timeline was established, the project teams selected activities for which they would take personal responsibility. These PACA timelines were initially sketched on large format ledger paper; this information was then transferred into spreadsheet format on municipal computers by small teams to make the action plans manageable and to facilitate budget planning.

Budgeting, monitoring, and evaluation planning took place in a follow-up CDAA-Municipal meeting. The project teams took each specific activity and assigned it an estimated cost, with support from the municipal accountant. Budgets were then tallied and summarized. Once the tasks were assigned, and costs for labor, materials, and transportation estimated, participants held a brainstorm concerning how to monitor and evaluate their projects. The teams adapted the Peace Corps' definitions of monitoring and evaluation for their projects: "monitoring tells us if our project is on track and we are making progress. Evaluation tells us if our project is on the *right* track and having the impact we had hoped it would."[2] In addition to earlier time-lining and responsibility assessments, the group assigned project monitoring and evaluation targets to ensure the projects would meet their objectives. The project teams discussed and developed monitoring checklists focused on budget and performance monitoring.

Once the monitoring checklists were elaborated, the teams focused on exploring questions to be used to evaluate the project. The following questions were adopted to evaluate project objectives:
1. Were the goals and objectives achieved?
2. What can people do better now than they did before?
3. Did the project have a positive effect on the community? Were there any negative effects?
4. How were people and organizations in the community linked together? Did the various efforts encourage new connections between associations and institutions such as schools, businesses, churches, and social clubs?

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[1] Peace Corps. "The New Project Design and Management Workshop Training Manual" Washington, D.C., 2003. pg 88
[2] Ibid, pg 101

5. What existing community resources or assets were utilized? Were additional resources mobilized?
6. What were the key decisions made, and how did these influence the project? What other alternatives could have been considered?
7. Has the project been sustainable? How is the community working toward this?[1]

Outlining what questions were going to be asked to evaluate the project and highlighting the fact that an evaluation process would take place helped the project team create a feedback loop to ensure effective project management and evaluation.

The CDAA sought to incorporate what it had learned in the Participatory Design Charrette in the design of small projects to improve Areguá's economy, ecology, and society. Participatory Action Research methodology was adopted to begin small and scale-up work on these projects and goals. After the success of the Participatory Design Charrette the team felt confident they could elaborate further projects (as outlined) and eventually take on the master planning of Areguá. The group sought to build capacity in the municipality and within the Areguá District Environmental Council for project design and management by working together to produce projects with measurable results by creating their own program of Participatory Action Reseach. They sought to work with the community to help Areguá address its considerable economic, ecological, and social challenges by increasing the community's capacity to engage in sustainability planning.

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[1] Ibid, pg 106

6. Post-planning, Results, and Conclusion

6.1 Post-planning

The Peace Corps Municipal Services Development Project collaborated with the Areguá District Environmental Council (CDAA) and the municipality of Areguá to devise a slate of small projects to build institutional capacity for community sustainability planning beginning in late 2008. To plan for these projects, the parties used a Participatory Design Charrette to examine Areguá's context, and develop a vision for the town's future. Participatory Action Research was employed to develop a series of small projects to begin to address some of Areguá's social, economic, and ecological challenges. Each initiative was headed by a member of the CDAA paired with a civil servant from the municipality. The teams created action, monitoring and evaluation plans, and a project budget using Participatory Analysis for Community Action tools.

Municipalities in Paraguay receive funding from three major sources: royalties, taxes, and fees. Taxes and fees are largely dedicated to paying the salaries of municipal employees (especially loyal partisans) and the operation of the municipality. Royalty payments derive from the Itaipú dam; equally co-owned by Brazil, to which Paraguay sells its surplus share of electricity at well below the market rate. The royalty proceeds are divided, with half going to the national government, and half going to sub-national governments.[1] Ten percent of royalties are dedicated to departmental governments while forty percent is transferred to municipalities.[2]

Departments and municipalities directly affected by the land lost to dam-related flooding receive a larger portion of the funds (five percent for affected departments and fifteen percent to affected municipalities).[3] Non-affected departments also split a portion of the royalties. Departments receive five percent and municipalities receive twenty-five percent of the royalties (split among a much larger pool than the dam affected areas).[4] Eighty percent of Itaipú dam funds are dedicated to physical public infrastructure (capital expenses), and twenty percent for recurring expenditures (to maintain and operate the physical infrastructure).[5] The funds are controlled by the Treasury Ministry and are disbursed to municipalities that can submit documentation of the projects they intend to fund.[6]

The *Liberal* political party collaborates with the U.S. Agency for International Development (USAID) to increase transparency in the financial management of these municipal resources. Every *Liberal* mayor is required to hold two public meetings annually: a public audience and a public budgeting meeting. In the first gathering the municipality presents its budget and reports on its activities throughout the year. In the public budgeting meeting neighborhood commissions present projects to the municipality each would like to see completed. The 2009 budgeting meeting was held in late November 2008. The Areguá District Environmental Council presented its slate of small projects aimed at moving Areguá towards sustainability at that gathering.

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[1] Fernando Camacho, vice director of *Itaipú Bi-Nacional*, formerly of the Paraguayan Ministry of Treasury. Direct Communication April, 2008.
[2] Ibid
[3] Ibid
[4] Ibid
[5] Ibid
[6] Ibid

CDAA sought additional funding to implement its Master Planning Project through the Small Project Assistance (SPA) grant program run by USAID's Office of Private and Voluntary Cooperation through an inter-agency agreement with Peace Corps. SPA grants enable "USAID country Missions and the Peace Corps to collaborate on local level community activities"[1]. These grants allow Peace Corps volunteers to access funding for community development efforts. Volunteers compete for funds allocated by USAID though a proposal process managed by the local Peace Corps program.[2] Matching funds are required of the organization seeking the grant. CDAA sought matching funds for its planning project from the municipality of Areguá through the budgeting/meeting process.

The CDAA was confident that its projects would be funded. The needs the projects addressed were identified through the participation of a broad base of the community and the efforts themselves were politically popular with the citizenry. The projects were well-designed and actionable and each offered clear benefits for the economy, ecology and society of Areguá. Project costs were reasonable and well within the scope of the royalties received from Itapú. Additionally, the projects were developed in close collaboration with the municipality's civil servants and had the blessing and stated support of the mayor and town council. The process of selecting the projects for funding and receiving the royalties took several months. During this time, a land-use dispute arose that changed the relationship between the CDAA and the municipality.

In a closed session in September of 2008, the mayor and the town council altered Areguá's *POTA* (the land use plan) to allow fifty-four hectares of forest and ephemeral wetlands land previously zoned as environmentally protected to be re-zoned as low-density residential property suitable for subdivision and urbanization. The land was subsequently subdivided into half-hectare lots with the municipality's approval. The government did not publicly announce this change and the only notice the community had was after bulldozers moved onto the land and began clearing it. CDAA members were incensed by this activity and felt betrayed by the municipal administration. It mounted a campaign against the action arguing they were illegal, violating the Executive Decree Number 5686 of 1990 declaring Lake Ypacarai a National Park. The CDAA felt it had no option but to oppose the backroom modification of the land use plan and to fight the subdivision of the land.

The CDAA mounted a public campaign to stop the logging and road building on the property and to return the property to protected status. They contacted the national media, and lambasted the mayor, town council, and national Secretary of the Environment (SEAM) in the press. They organized citizens to petition their council representative and demanded a public meeting on the matter. At the public gathering, the mayor asserted the town council's right to alter the land use plan as it wished. He also asserted the private landowner's right to use their land as they desired on the grounds of the sanctity of private property. The meeting ended abruptly without the conflict being resolved or understanding among the parties being created.

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[1] U.S. Agency of International Development. http://www.usaid.gov/our_work/cross-cutting_programs/private_voluntary_cooperation/ March 2010.
[2] Ibid

The CDAA involved the environmental NGO that created the land use plan, Altervida, and contacted the public prosecutor to investigate the land's subdivision. These steps further alienated the municipal administration. In reaction, town leaders forbade the CDAA to meet within the bounds of the municipality. Still more injurious to CDAA's efforts in community sustainability planning, the municipality disallowed civil servants from working with the CDAA as on the slate of small projects that had been devised.

CDAA believed the municipality had acted illegally by changing the *POTA* without public notification, violating the spirit of the land use ordinance. The town contended the CDAA had over stepped its merely advisory role as a council on sustainable development. The urbanization of the forest and wetlands continued unabated, the CDAA was unable to halt subdivision of the land. This left the CDAA membership with feelings of frustration and powerlessness and doubts about the effectiveness of their participation in the entire planning effort..

CDAA members were split concerning how to react to the confrontation. The consensus was that the organization had to condemn the manner and substance of the change to the land use plan. Some saw continued urbanization of the lake region as untenable, and vowed to continue devoting themselves to challenging the development. Others viewed additional confrontation with the municipality as counter-productive, and did not want to risk further damage of the relationship with the mayor and town council.

The "let's get beyond this" group made the case for the necessity and value of the small projects that had been developed in collaboration with the municipality. Accordingly, those individuals wished to seek reconciliation with the municipality. The membership could not agree concerning how to proceed. The advocates for continued confrontation vowed to maintain their campaign of public opposition to the development. Those pressing for engagement, meanwhile, sought to mend their relationship with the municipal administration and salvage the effort already undertaken.

As a result of this conflict in its membership, and without the support of the municipality, the CDAA lost its mandate and funding source. Without consensus on its mission, policy, and what role the CDAA was to play in the community it could not continue. The small projects were not awarded funding by the municipality. Without the town's portion of the funding, the USAID-Peace Corps Small Project Assistance grant was unattainable and further efforts to develop a master plan were stymied. This was a great disappointment and discouragement to the civil servants and CDAA members who had invested so much in developing the initiative.

In addition to the conflict caused by the settlement of the land in the national park, the projects were not permitted to create benefits for Areguá's politicians or political parties or to gain wide public currency and support. Areguá faces deeply ingrained governance issues and lacks transparency in financial management of public resources. Municipal practices and processes that were created during the kleptocracy of the dictatorship remain largely intact throughout Paraguay, including Areguá. The political structure in Paraguay is not responsive to the needs of the population. Over ninety percent of revenues collected locally are used for salaries of municipal employees and contractors (the remaining funds are used for daily operating expenses

of the municipality).[1] These employees and contractors secure their employment by being political supporters of the members of the town council or the mayor. These officials perform political work for the elected officials as part of their unofficial duties by lining up votes and distributing resources.

Additional funds are transferred from the federal government. The process of political decentralization has been slow and resources are scarce. The municipalities receive below two and a half percent of tax revenues collected nationally. These funds are most often funneled into public works projects executed by local administration supporters. By retaining public funds for use in the political arena and distributing them to their supporters, politicians build their base and maintain and expand their power.

As outlined above, corruption is perceived as business-as-usual in Paraguay, and so widespread as to be integral. In a 2002 survey, twenty eight percent of Paraguayans reported they had directly experienced corruption in the past year.[2] Paraguayans recognize corruption as damaging, and perceive politicians as a corrupt class, regardless of party affiliation. It is acknowledged widely that political figures take public funds and distribute them to political supporters through projects that are overbuilt/over-billed. This is viewed as the normal state of affairs. The exception is an elected leader who takes municipal revenue and invests judiciously and efficiently in the community. It is difficult even for well-intentioned politicians to buck the system. The party structure in Paraguay pressures candidates to pledge resources to party officials to gain their backing in elections.

The political process in Paraguay, as elsewhere, is more responsive to those with power and resources. Paraguay's social and economic disparities combined with deficiencies in the rule of law skew this balance greatly to the few powerful citizens. In Areguá, when an ex-general from a prominent family wished to urbanize land that was zoned as rural and part of a declared national park, the town council held a closed-door session and changed the law. The poor and powerless do have some representation within the Paraguayan political system based on their participation in their party. They gain the benefits of resources, based on their political power within their political party.

Being responsive to those with connections and resources is critical to politicians aiming to further their careers within their party, and to provide the resources they need to draw continued support from their constituents. Paraguayan voters are accustomed to supporting candidates that will benefit their family directly through the distribution of public and private resources. Politics, especially at the local level, is not driven by ideology or selecting the most efficient administrator. When a family has needs or complaints they approach their local political bosses for help with their problems, in exchange for their votes. Therefore, it behooves the voters to support the politicians that can deliver the greatest private benefits.

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[1] Personal communication from Carlos Hermosilla, director of municipal cadastre department, Areguá, September 20, 2008.
[2] Mitchell Seligson, "Impact of Corruption on Regime Legitmacy: A Comparative Study of Four Latin American Countries" The Journal of Politics, Vol. 64, No. 2, May 2002 Pp. 408-433

6.2 Results

The Peace Corps' project in Areguá sought to improve the delivery of municipal services by building institutional capacity to engage in community sustainability planning. This concluding section assesses that work in Areguá, in terms of the Peace Corps' Municipal Services Development project's goals and objectives and in light of the community's capacity to engage in sustainability planning. It reviews the project's primary challenges and what was done in response to those obstacles. The conclusion reflects on how the project's results in building community capacity for sustainable development in Areguá could be attained in other communities. It also investigates what additional research appears necessary to advance knowledge in the field of sustainable community planning in similar contexts. The paper ends with overarching conclusions on community sustainability planning in light of the literature and the project in Areguá.

The Peace Corps identified three goals and nine objectives for the Municipal Services Development projects (see pages 30-31). Goal one focused on increasing local government public management capacity through improving its planning, management, and evaluation practices. Related objectives included teaching needs assessment tools, project planning, management and evaluation techniques to local government employees. The project in Areguá was successful in teaching community needs assessment tools; planning, management, and evaluation techniques; and evaluation to municipal employees through the CDAA-municipal Charrette and small project development process. The question remains: while these skills are necessary to improve the type, scope, quality, and efficiency of public services, is it sufficient to aspire only to attain them?

Employees, in various departments throughout the municipality, learned a variety of tools and techniques to improve project planning, management, and evaluation practices. Unfortunately the town's staff were not motivated, incentivized, or empowered to implement municipal projects. These projects have costs, and need budgets for their implementation. These same municipal revenues are needed in Paraguay's political processes. Any innovations or changes to community processes or services were actively discouraged. Without the power to use their capacity to plan, manage, or evaluate projects important to their community, technical and institutional capacity is merely a theoretical ability. Little, if any, improvement in the type, scope, quality, and efficiency of public services was experienced by the close of the Peace Corps Municipal Services Development project. However, the municipal employees did value the training they had received, and were able to instruct community groups and members in project planning, management, and evaluation.

The second goal of the Peace Corps work plan was that local governments would improve their financial management practices by updating their revenue, expenditure, and budgetary systems and making them more transparent to citizens. The objectives that informed this goal included: teaching computer applications to local government employees; recommending improvements to budgetary systems; and increasing transparency in the collection of revenue. The municipality did not improve transparency in its operations or budgeting. The annual public audience budget meeting, *la audiencia presupestaria*, was widely seen as a farce and a platform for the political party. The municipal budget was closely guarded and any information about the municipality's

finances was opaquely held. The Peace Corps' Municipal Services Development project in Areguá was not able to effect any material change toward this goal, other than improving municipal employees ability in computer applications, given the municipal leaders' resistance to financial transparency.

The final goal of the Peace Corps' Municipal Services Development project work-plan was that "citizens and community organizations will increase their participation in local government decision-making by improving their ability to organize into groups, plan and manage projects, and monitor governmental activities."[1] This goal had the following objectives:

> 1) Volunteers and their Counterparts will inform citizens in community organizations about their opportunities, rights, and responsibilities to participate in local governmental activities.
> 2) Volunteers and their Counterparts will teach new community-needs assessment tools to citizens in community organizations.
> 3) Volunteers and their Counterparts will train citizens in community organizations in organization, coordination, planning, financial management techniques, and evaluation tools.[2]

This goal, and its corresponding objectives, became the central focus of the Municipal Services Development project in Areguá though the Participatory Action Research of the CDAA and the Neighborhood Commissions' use of PACA tools. The project sought to increase community capacity to engage in sustainability planning by developing institutional capacity within both the municipality and community groups.

The first objective was addressed in cooperation with the municipal Neighborhood Commissions department. The Peace Corps project taught Participatory Analysis for Community Action to neighborhood groups so they would be empowered to develop and implement their own solutions to community issues. These tools were taught after an initial presentation educating them on their rights and responsibilities, especially the legal requirements, as a neighborhood commission. This objective was also addressed in the Participatory Design Charrette, which encouraged citizens to participate in the visioning of the community's future. This work was also addressed within the municipality by developing a facts sheet of Neighborhood Commission roles and responsibilities in coordination with the municipal Neighborhood Commissions Department.

The second objective was to teach new community-needs assessment tools to citizens in community organizations. Community groups were taught three participatory research approaches: Participatory Analysis for Community Action (PACA), Participatory Design Charrette (PDC), and Participatory Action Research (PAR). These techniques were used to assess Areguá's needs (these research methods and the projects developed from them were outlined in Section 3 and 4 of this paper). These techniques are inherently participatory, and as such require that those using them learn how to employ them. Participatory research techniques enable those using them to assess needs and envision possible futures at both neighborhood and municipal levels. By utilizing these processes, participants perform the needs assessment

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[1] Ibid. Peace Corps
[2] Ibid. Peace Corps

research themselves. This hands-on process makes needs assessment more engaging, which facilitates participant learning.

Participatory research techniques also proved an effective means to train citizens in community groups in organization, project coordination, planning, financial management, and evaluation tools; the Peace Corps Municipal Services Development project work-plan's last objective. It proved effective for many of the same reasons that the training in needs assessment tools proved effective: participants took ownership of the process. The final work products were produced by, and for, the end user. To paraphrase a clichéd development metaphor: learning to fish is more engaging when you are hungry.

The goal of "Citizens and community organizations increasing their participation in local government decision-making by improving their ability to organize into groups, plan and manage projects, and monitor governmental activities" was halfway met. Training citizens and community groups in planning and managing projects, and monitoring governmental activities, was a necessary, but not a sufficient condition to increase their participation in local government decision-making. The community members who participated in the CDAA were well trained in and able to, organize, coordinate, plan, manage finances, and evaluate projects (as were the municipal employees). This did not lead to the implementation of projects, as the ultimate power lay with the town's elected officials. The community group's participation in local government decision-making was not changed in spite of their improved ability in the aforementioned skill sets. Much as the municipal employees were not empowered to use their newly expanded capacity to provide public services, the citizens in community groups were not able to expand community participation in municipal decision-making.

The work-plan stated the project's purpose as: local governments in Paraguay will increase their capacity, quality, and citizen participation in responding to community needs.[1] By this metric the Peace Corps Municipal Services Development project was a failure. The local government in Areguá did increase its capacity to respond to community needs through training employees in project planning, management, and evaluation practices. Nonetheless, the municipality failed to increase citizen participation and quality response to community needs.

Municipal employees' use of participatory research techniques did engender genuine participation from the community. Municipality employees collaborated in PACA implementation and the Participatory Design Charrette; and they were active in the CDAA's Participatory Action Research process until conflict arose. The work products that these processes generated captured creative and original thinking about the community Areguá could be. The research processes and the work products they generated could be considered an increase in citizen participation; the research captured a vision for the future of the community. Where it failed was in the implementation of this vision. Participation in a process without execution is a root cause of disillusionment and apathy; the opposite effect of Peace Corps' stated project objective of promoting democracy.

The municipal administration was unwilling to enhance the roles and responsibilities of local government employees in delivering public services. The political establishment is not interested

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[1] Ibid. Peace Corps

in increased public service delivery. Its interest instead is to ensure that municipal revenues enhance and maintain the party's political power. Delivering quality services and increasing community participation in government is contrary to the political objective of singular dominance of political power.

The second set of metrics the Peace Corps Municipal Services Development project may be measured against here is the definition of community sustainability planning as elaborated by Berke and Conway and explored in section three above.[1] They have defined community sustainability planning as: "a dynamic process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic, and ecological systems, and link local actions to global concerns."[2] This definition has four primary components:

5) *Balance:*
   Striking a balance among environmental, economic, and social values; achieving balance entails coordination, negotiation, and compromise with all three values being represented.
6) *Dynamic Process:*
   Sustainability requires continuous movement in the direction of becoming more sustainable.
7) *Reproduction:*
   The long-term ability of systems to continuously reproduce and revitalize themselves: sustained community resiliency.
8) *Link local to global concerns:*
   Reaches beyond local interests and links local context to global (and regional) environmental, economic, and social systems.[3]

By these metrics, the community of Areguá is not engaged in Community Sustainability Planning.

No balance was struck between environmental, economic, and social values when the Council elected to subdivide previously protected land. More pointedly, no sense of coordination, negotiation, or compromise was achieved. Areguá is not engaging in continuous movement towards becoming more sustainable. To the contrary, its natural and cultural capital is increasingly imperiled. Areguá is not becoming more economically, socially, or ecologically resilient. Rapid urbanization is being poorly planned, and the most vulnerable populations hold a precarious existence. Local systems are not being linked to global concerns; Areguá is not a model community for other rapidly urbanizing municipalities in the economic periphery. Clearly, Areguá is not engaged in sustainable development by these measures. Yet, according to Berke and Conway, sustainability is not a finite or achievable end goal. The project did not create sufficient social or political capital to achieve its aim of engaging the community fully in sustainability planning.

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[1] Maria Manta Conroy and Philip R Berke, "What Makes a Good Sustainable Development Plan? An Analysis of Factors that Influence Principles of Sustainable Development," *Environment and Planning A* 36 (2004): 1381-1396.
[2] Ibid, p. 23.
[3] Ibid, p. 22-23.

Importantly, beyond developing the necessary social or political capital, the Municipal Services Development project did not have the necessary material capital to overcome these challenges and to implement the CDAA's small projects. Without outside inputs of material capital, implementing the projects based on the members' own limited assets, or what they could be expected to develop from the community, the small projects proved un-implemenatable. Paraguay is a poor country, and Areguá is a poor community, with fierce competition for scarce resources. If CDAA had been successful in locating alternative funds to pay for materials and staffing, the projects most likely would have proceeded. If the initiative had gone ahead, it might have shifted the balance of political capital behind the use of resources to develop sustainable municipal services. If projects that improved the local society, economy, and ecology had been practically demonstrated, Areguá would be further down the path towards sustainable development than it stands today.

6.3 Conclusion

Despite the failure to implement the CDAA's small projects, and the organization's eventual dissolution, the effort did have value. The process built the community's human capital to develop small projects and the knowledge gathered from the participatory research process that went into creating the projects remains in the community. A strong element within the town continues to strive to implement systems that would sustain the resiliency of the community's vestigial natural and cultural capital before it disappears completely. Importantly the youth of the community feel engaged and empowered, given the tools and processes they learned, to continue striving to protect Areguá's ecology and culture.

The Municipal Services Development project in Areguá is instructive for other grassroots community sustainability planning projects for its failures, as well as its successes. The primary lesson that can be taken from the project is the value of participatory research techniques in enhancing the ability of municipal and community groups to develop small projects through interactive training in situational analysis, inventorying resources, creating a clear vision of a preferred future, project design, action planning (creating tasks, roles, and timelines), budgeting, monitoring, and evaluation. While the project lacked sufficient material and political capital to achieve its aims, the increase in the community's ability to engage in the process had value. More study needs to be conducted to improve the understanding of, and explore the value of, participant research techniques in community sustainability planning.

Paraguay's program of decentralization shifted critical state responsibilities to the municipalities from the national government. Yet, that policy shift was not accompanied by a corresponding shift in resources or technical assistance to the municipalities to match the increase in responsibilities. The decentralization process in Paraguay has been fraught with delay in the transfer of material and technical resources to the sub-national level. The political will to implement the program of decentralization fully has not materialized at the national level. Municipalities are not capable of executing these responsibilities given their limited financial and technical capacity. There is no history of the federal government successfully divesting its responsibilities or fully funding a department or municipality to be able to take on the responsibility of providing public services.

A year after the completion of my service, Peace Corps terminated the Municipal Services Development project. They found it inadequately successful in improving service delivery to Paraguayan municipalities. A volunteer's ability to alter a municipality's governance without the municipality's consent is limited. Few mayors, the democratically elected and responsible parties, desire to delegate their governing responsibility to foreign volunteers. This is a critical weakness in Peace Corps' Municipal Services Development project.

If a similar project attempts to address community sustainability planning in Areguá it should:
  a) Be explicitly authorized and backed by the National Environmental Secretary
  b) Receive cooperation from the mayor and town council.
  c) Have sufficient resources to fund viable plans.

The national government retains a high degree of authority over the municipal governments, especially those governed by their party. The political appointees are power brokers within their own parties and wield significant influence. If the National Secretary of the Environment backs a project it is more likely to receive buy-in from the local municipality, especially among party members. Sufficient resources to fund the activities of a project are crucial. Paraguay has a capital constrained economy and little economic parity. Implementing sustainability-related projects often requires resources beyond what the community can reasonably develop through its own efforts. Investing in sustainability community planning demonstrates its value to the community.

These measures along with participatory research techniques could drive a community sustainability planning process in Areguá. With sufficient resources, Areguá's could expand the scope of participation and the range of projects implemented in the community. The economic circumstances of many in Areguá are marginal to precarious; funding the project cannot depend exclusively on them. An ideal project would generate sufficient income to sustain its activities and benefit the local economy. It would create dignified employment for citizens while restoring the local ecosystem. A project attaining these gains would be a powerful force for positive change in Areguá.

The world's population is rapidly expanding and continually urbanizing. The drama of small semi-rural towns being swallowed by the growth of burgeoning metropolises in the global economic periphery will continue to play itself out over the coming century. The study of community sustainability planning in this context is woefully inadequate. Ecological sustainability, and community sustainability planning, is too often viewed as a post-industrial luxury that only the world's richest communities can practice.

There is no doubt the participatory process and indeed sustainability, require the development of a variety of forms of capital. The academic community needs to devote its resources to studying the barriers to sustainable communities in municipalities like Areguá if we are to achieve global sustainability before the balance of our dwindling natural capital is spent. The economically and politically disenfranchised in places like Areguá deserve the right to shape their own destinies and provide a livable future for all the members of their community.