Reasserting Community: The Social Challenge of Wastewater Management in Panajachel, Guatemala

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This article assesses recent efforts in a multiethnic town in the Guatemalan highlands to address wastewater pollution, which threatens public health and tourism, the basis of the town’s economy. Reporting on an ongoing program of action research, the authors trace the erosion of traditional, Mayan civic and religious institutions that were previously responsible for maintenance of a collective waterworks infrastructure, which in recent years has become the conduit for untreated sewage. They detail how a wastewater treatment plant was built in the town with external expertise and finance, and with little regard for its social and institutional sustainability, and they analyze how local government, business associations, and nongovernmental organizations are now taking steps to address these shortcomings. Treating community not as a fixed social unit but as a network of social interactions that are continually remade, the authors argue that while state and market forces have undermined traditional institutions of local governance, they may also become foci for reasserting community and rebuilding the relationships of shared responsibility necessary to manage the commons. The challenge for development practitioners working in public infrastructure and other domains is to integrate project planning and implementation into processes of community building.

Key words: common property, community, wastewater management, public infrastructure, Guatemala

In November 1999, with great fanfare, the Guatemalan government inaugurated a new wastewater treatment facility in Panajachel on the shore of Lake Atitlán, one of three principal tourist destinations in the country. Financed primarily by the European Union as part of its aid package for post-civil war reconstruction and highlighted by some in the national government as a symbol of social investment promised in the peace accords, the plant is state-of-the-art among public wastewater treatment facilities in Central America. Within months of its inauguration, however, it was threatened with closure. The most immediate problem, common to aid-financed infrastructure projects around the world, is a lack of funds for operations and maintenance. Underlying this apparently straightforward financial obstacle is a challenge that runs much deeper, a failure to “build” the social and organizational foundations for project sustainability.

The Panajachel plant is designed to fulfill a “public need” as assessed by project planners, but for the first two years following its inauguration, there were few in the town who saw it as a public asset, much less as a commons—collectively owned, managed, and maintained. As recently as the 1950s, when Panajachel was still a rural, primarily agricultural community, the town’s water infrastructure was managed as common property. With the extension of state authority and the gradual incorporation of most households into the market economy, fees paid to the municipality for public services replaced traditional household contributions of labor directly in service to the community to maintain the irrigation system. The current controversy surrounding the treatment plant points toward an unmet need to reconstitute community around a new common interest in meeting the irrigation system. The current controversy surrounding the treatment plant points toward an unmet need to reconstitute community around a new common interest in meeting the irrigation system.

This paper describes an ongoing program of action research aimed at generating public dialogue among a broad range of local groups and national agencies with a stake in

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the social, economic, and public health consequences of pollution in Lake Atitlán and in efforts to improve wastewater management and treatment. In keeping with the action research model (Whyte 1984), the goal is not only to study a problem, but also to work collaboratively with local partners in assessing both the underlying causes of the problem and possibilities for cooperative action to address it. As such, the analysis presented here is a snapshot of a work in progress, incorporating information from interviews, group consultations, and discussions conducted periodically during January 2001-September 2002, including a stakeholder dialogue organized in April 2001 at the Atitlán Nature Reserve on the outskirts of Panajachel.

The action research process has been closely linked to the ongoing work of the Nature Reserve and its outreach with communities of the lake basin, and to an experiential education program of the Higher Education Consortium for Urban Affairs (HECUA). Guided by a philosophy of learning through reflective engagement in contemporary social problems, the study program was designed to include visits with many of the key players in Panajachel’s wastewater management controversy, including the plant engineer, town mayor, head of the basin authority, a number of non-governmental organization (NGO) leaders, and neighborhood residents. The program also hosted study visits by outside faculty, including an engineer who provided assistance to put the plant’s laboratory facilities in operation. The authors conducted individual interviews with these and other stakeholders, drew on an existing body of prior interview data in reconstructing the historical context, and held discussions with key persons who had since departed the local scene, including the lead designer of the plant and the town’s former mayor who championed the project. We compiled a briefing report on the wastewater and water quality challenge, citing the best available data, and including a very basic analysis of the potential economic implications of the problem, the gap between user fees and operations and maintenance costs for the plant, and the equity of the fee structure. The briefing report, in the absence of any official document on the issue available within the community, proved helpful to elicit feedback and triangulation of perspectives that improved our shared understanding of the problem—and to launch discussions on potential solutions. It specifically provided the background for the stakeholder dialogue forum, hosted by the Nature Reserve, which achieved agreement among many of the key figures on principles for addressing the problem, as detailed later under Reasserting Community.

In addition to offering insights into the practical questions of how planning and design of public works projects can be made more viable through efforts to reassert and strengthen community, this research yields theoretical implications on the role of state and market in processes of disembedding (Giddens 1984) and re-embedding community. While we agree with McCay and Jentoft (1998) that the institutionalization of state administration and market integration can potentially undermine community institutions for managing common property, we do not see this outcome as either inevitable or irreversible. The Panajachel case offers instances in which state and market forces have reduced the space for social interaction around the commons, eroding networks of community, and alternately, instances in which the market and state administration become foci for reasserting community and rebuilding institutions for managing the commons. The degree to which this potential is realized, we argue, depends upon the ability of social actors to engage in a dialogue that achieves sufficient alignment of shared interests among the multiple, overlapping subgroups whose relationships constitute the broader community.

**Commons and Community: Situating the Argument**

Our argument is grounded in a specific conception of commons and community, and of the dynamic and interdependent relationship between the two. To help distinguish this conception, it is useful to consider its place within the now extensive literature on common-property resource systems. Much of this writing takes as its impetus the influential views of Olson (1965) and especially Hardin (1968), who argued that individuals are incapable of managing collective resources for the common good without some externally imposed coercive threat. Consolidating a wide body of research providing evidence to the contrary, Ostrom (1990) presented the most systematic statement of how effective common-property resource systems have evolved and the mechanisms of “self-governance” that can sustain such systems. Each of these now classic texts is framed within the rational choice tradition, subscribing to the fundamental proposition that individuals act rationally to maximize their own utility in reference to institutional rules that provide incentives guiding individual choices. Ostrom’s key proposition is that these rules often are designed and adapted quite effectively by the collective of users who depend on a shared resource, a possibility precluded by the imposition of privatization or state management—typical policy measures aimed at averting the “tragedy of the commons.”

A more recent strain of research, while reaffirming the importance of common-property resource systems, takes exception with the limits of the rational choice tradition to explain either the social relationships that sustain these systems or the political and economic forces that threaten them. McCay and Jentoft (1998) provide a particularly succinct theoretical argument integrating both these strands of critique. Invoking Durkheim’s concept of social solidarity, they argue that community is more than a collection of individuals or the aggregate of individual choices, that it provides an integrated moral framework: “the community can provide normative guidelines and meaning to the private sacrifices involved in collective action” (McCay and Jentoft 1998:23). The vitality and persistence of common-property resource systems, which exert restraints on individual behavior and incentives toward collective action for the common good, depend upon
the broader network of relationships and social bonds that make up community. True tragedies of open-access resource use and ecological decline should be understood, they argue, as instances of “community failure”:

A working hypothesis is that the social conditions required for tragedies of the commons may result from situations where resource users find themselves without the social bonds that connect them to each other and to their communities and where responsibilities and tools for resource management are absent (McCay and Jentoft 1998:25).

Amplifying concerns raised earlier by Bromley and Cernea (1989), McCay and Jentoft call for a focus on broader relationships of power that may undermine the social bonds of community, with particular attention to processes of state administration and market integration.

The present study critically examines this link by asking how the assertion of state administration and rapid market integration have affected a long-standing common property irrigation system in Panajachel over the past two generations. Yet, we also want to understand the roles the state and market play in the capacity of Panajachel’s residents to address the relatively new problem of wastewater management. To undertake these analytical tasks, we need to move beyond the notion of a single community comprised of individuals with a common set of interests and subscribing to a single, integrated moral framework. However appealing such a view may be in the theoretical defense of traditional common-property systems, it fails miserably to portray the reality of Panajachel and, indeed, most places where common property resource systems are under stress today.

Community, in the sense we use the term, refers not to a place or to a fixed group of individuals, but instead to a set of shared interests, rooted in judgments of value, and to the networks of social relationships that form around these (Gudeman 2001). These shared interests may comprise matters of collective identity, such as the observation of religious festivals in honor of a certain patron saint; they may also be matters of material welfare, such as the management of a forest or water resource on which community livelihoods depend. It is this collective valuing of something, and identifying a shared interest in its maintenance, that constitutes a “commons.” Our use of the term “commons,” therefore, includes, but is not limited to, the case of common-property resource institutions. The commons refers not to a physical entity as such, but to a “social event” (Gudeman 2001:27). The creation and maintenance of a commons are expressions of community; maintaining the commons both depends upon the existence of social relationships and provides a focus for the continuation of those relationships. Following this conceptualization, we must recognize that wherever the residents of a place or the stakeholders in a given project uphold a diversity of values and interests, we are dealing not with a single, unitary community, but with a mosaic of overlapping networks of community.

Panajachel and the Lake Atitlán Basin

The culturally diverse and ecologically rich region of Lake Atitlán in the Guatemalan highlands is in the midst of an economic transformation—one that is providing new opportunities to local communities while at the same time eroding the basis of many traditional livelihoods. In the past 30 years, following a regional trend, agricultural production in the lake basin has shifted from subsistence production of milpa (maize) and beans to intensive cash cropping using synthetic fertilizers and pesticides (Conroy, Murray, and Rosset 1996:48-56, 126-130). In the last generation, cheap plastic tubes, used to carry water from springs and streams in the upper watershed for both household use and irrigation, and increased peasant household resources extended agricultural production into the dry season and into areas previously only devoted to seasonal planting. As a result, water use has increased and tensions are rising over its allocation and proper use.

Tourism has also grown rapidly, particularly since the conclusion of the most violent period of the civil war in the 1980s and a return of relative security. Hotels and small accommodations, restaurants, and arts and crafts stores are thriving, as are specialized bus and boat services. Tourism now provides wages for more than half of the economically active population of Lake Atitlán’s northern shore towns and supplies the main market for most of the household arts and crafts produced by communities around the lake. Fifty years ago, apart from some merchants and the owners and operators of the three hotels on the lake shore, the vast majority of Panajachel’s residents relied upon agriculture for their livelihood. Today, nearly 80 percent of economic activity in the town is derived from tourism. Tourism has also accelerated immigration to Panajachel and furthered a gradual diversification in its social composition. In 1964, approximately 3,000 people, most of whom were native K’aqchikels, lived in Panajachel. By the time the most recent census was taken in 1994, the population had more than doubled (7,339 permanent residents; Instituto Nacional de Estadística 1994). Today, Panajachel includes a large ladino population, along with K’aqchikel people from nearby towns such as San Jorge and Santa Catarina, Tzu’ujil people from across the lake, and K’iche and other Mayan peoples from other parts of the country, as well as some 700 foreign residents and an additional 3,000-4,000 tourists at peak season.

In recent years, ecological decline has become more evident in the lake and the surrounding lake basin, whose population has grown to 257,000 (Instituto Nacional de Estadística 2002). Principal concerns are declining shoreline water quality caused by municipal sewage and agricultural runoff, deforestation and loss of shoreline habitat, and related threats to terrestrial and aquatic biodiversity. Efforts to protect the lake basin are confronted with a classic problem of collective action: how can a set of actors with diverse interests be motivated to protect a common resource, especially when the burdens and the benefits of protection are not
equally shared? Unlike past natural-resource management problems that could be effectively addressed at the village or town level, such as irrigation management or solid waste collection, reversing ecosystem decline and protecting water quality in the lake requires an additional level of cooperation at the basin scale.

In view of this challenge, the Atitlán Nature Reserve has tried over the past decade to engage other local actors in providing a “platform to talk about our common future,” a place where the various communities that live within and depend upon the lake basin can define issues of common interest. The Nature Reserve, located just outside the town of Panajachel on lands of the historic Finca San Buenaventura, is a private concern providing opportunities for environmental education, recreation, and research. Its facilities are regularly used by nongovernmental organizations and government agencies dedicated to environment and development projects. The Nature Reserve has also sponsored meetings of the Mayan mayors of the lake basin to discuss issues related to solid waste management, biodiversity protection, organic agriculture, and other concerns.

Current research on the problems of wastewater management in Panajachel is an extension of this engagement, made possible through existing links with neighboring communities and with a variety of governmental and nongovernmental organizations within the lake basin. These efforts are described in more detail below.

Social History of the Jucanyá Wastewater Treatment Plant

The vice president of Guatemala’s visit to the newly opened Jucanyá wastewater treatment plant in early 2000 was meant as a very public display of government getting work done in the service of the people, part of a flurry of public works ceremonies staged to build support for the ruling party, Frente Republicano Guatemalteco. Whatever sense of cooperation and progress the scene conveyed, it masked layers of underlying conflicts and obstacles. For months before the plant’s inauguration in November 1999, Panajachel’s mayor had refused to officially receive the facility, which the municipal government would be expected to manage despite an absence of trained staff, operating manuals, and funds for maintenance. From his perspective, it entailed an added cost and responsibility the municipality was in no way prepared to assume. What explains this tension?

From a public health perspective, wastewater pollution in Panajachel had already reached alarming levels. Around half of Panajachel residents discharge their household water into the network of open ditches that cross the town, converting a network developed and maintained over generations for irrigation into an outlet for raw sewage. These highly polluted waters are still used to irrigate crops—presenting direct contamination risks—and they flow into the lake. Lake Atitlán is still considered the cleanest in Guatemala (Castellanos 2001), in part because its unusual depth provides a sink to trap pollutants and because the area has relatively little industrial activity. Nevertheless, water quality on the shoreline is an increasing concern for public health professionals and for business leaders, who note that tourists are already being deterred by warnings in guidebooks concerning pollution in the lake.

Efforts to construct a modern wastewater treatment plant were initiated by former Panajachel mayor Dr. Sergio Lavarreda. A dentist by training, Lavarreda had grown up in the town and witnessed the transition from communal water sources to piped household water supply. As mayor, he made public health a priority and spoke of how untreated wastewater flowing into Lake Atitlán would quickly threaten the tourism industry. The European Union invited Lavarreda on a study trip to Europe, where he toured various facilities and decided a modern wastewater treatment plant was needed. In 1992, he requested assistance from the European Union to build a plant.

From an engineering perspective, the plant is well designed, incorporating features to minimize maintenance and even generate revenue through production of biogas and fertilizer. However, because plant operations were begun without the customary start-up phase, in which design adjustments are made in the field, it has several operating problems, including tank corrosion, pipe breakage, and loss of the biogas production capacity (Luis Villalobos, plant engineer, personal communication, March 2001; Arthur E. McGarity, engineer and professor, Swarthmore College, personal communication, September 2001). The plant is also operating well below its intended capacity because of delays in getting the town’s residents and businesses to connect to the system.

Most worrisome to the municipal government is its inability to generate sufficient revenue through user fees to cover the costs of plant operation and maintenance. Monthly operations and maintenance costs in 2001 were 31,000 quetzales ($3,875 at Q8 per dollar), while fees actually collected by the municipality (some Q4,200 per month in the best case) covered only 13 percent of this amount. If costs for plant replacement are factored in (current plant construction costs extended over 20 years, without inflation, total Q18,000 per month), user fees covered only 9 percent of the total operations and maintenance costs (Luis Villalobos, personal communication, April 2001).

Initial rules set by the municipality actually discouraged property owners from connecting to the system because they demanded that users demonstrate legal ownership of the property and be up to date with other tax bills. These requirements were subsequently lightened: a user requesting sewage connection need only be current with payments for trash collection and water supply, then pay a connection fee of Q75 (about $9.40). Of some 1400 households recorded by the municipal government, slightly more than half had been approved for connection by April 2001, and 550 connections were operating. Three of the 8 major hotels were connected and paying their fees, as were 6 of some 40 guesthouses.
Despite the clear public benefits of wastewater treatment, and despite a series of meetings convened to explain the new requirements, municipal authorities were facing a wall of noncompliance.

The Social Context of Failure to Pay

Project planners commissioned by the European Union did not foresee problems in financing operations and maintenance of Panajachel’s wastewater treatment system because they failed to understand the distribution of resources within the community. Nor did they grasp the historical and political obstacles to generating community support in public works and confidence in local government. Even if the tourist economy generates significant income for a community of this size, income inequality is huge across the spectrum from large hotel owners to the poorest residents. While the planners were correct in calculating that the burden of user fees would not be onerous on the basis of average income, they were unrealistic in assessing the burden on most households. Most residents of Panajachel have little or no income beyond what is required to meet basic needs.

More fundamental to the unwillingness of many of the town’s residents to pay user fees was an enduring distrust of municipal government and its ability to manage funds in the public interest. This is due to generally low confidence in government institutions as a legacy of the civil war, as well as allegations of official corruption that plagued a series of recent local administrations. Panajachel’s mayor at the time the plant was inaugurated, Bracamonte, was impeached for efforts to “rescue” the lakefront from rich property owners, a ruling the Constitutional Court upheld, after which he sued to retain his position. The notion of an embattled public servant fighting to keep his title despite community opposition would have been unthinkable under traditional models of local governance. Traditionally, Mayan communities have modeled their relations with authorities on a practice of life-long commitment, knowledge, and service to community. Under the current electoral system, however, candidates backed by the powerful national parties have typically had little or no experience of genuine service to the community and thus lack an ability to garner the legitimacy that comes from effectively representing community sentiment.7

Waterworks and the Historical Transformation of Community

The maintenance of public waterworks, a point of such contention in Panajachel in recent years, was until not long ago a principal expression of community and collective responsibility. Panajachel’s transformation over the last half century from a rural K’aqchikel agricultural community to an urban, multiethnic community dominated by the tourism industry8 was accompanied by a transformation in the relationship between community members and public works. The waterworks created to feed the highly productive tablón system of agriculture in Panajachel depended on seasonal service to community in which each household participated. While the irrigation ditches (tomas de tablones) that run between the raised tablones, or cultivation plots, were maintained by households, the large feeder canals that draw water from the rivers (tomas grandes), as well as the secondary canals that direct water to sections of tablones as required (tomas secundarias), were maintained collectively by the community in a festive day of work typically held on a Sunday at the beginning of the dry season (Mathewson 1984:95).

“There was one canal head (jefe de tomas) for the whole town,” recounts Juan Ramos, a 71-year-old K’aqchikel elder. “He didn’t get paid for his position (cargo). He had to be somebody who knew how to talk to people” (interview, March 10, 2002). The organizing talents of the canal head were essential not only to plan the work itself but also to ensure full participation and resolve conflicts. Everyone who used the canals, he says, provided labor from their own household on these days of collective maintenance or paid for a worker in their stead.

The shift to state administration of the municipal waterworks in Panajachel paralleled a gradual erosion in the traditional structures of alcaldía and cofradía, the interwoven civil and religious systems of local governance and service.9 Until 1975, the Mayan head of the alcaldía served as assistant (alcaldé auxiliar) alongside the mayor, invariably a ladino, who held formal authority in the eyes of the state. “Now there is no more native mayor (alcaldé natural),” Ramos laments, “…today everything depends on a salary.”

Similarly, the expectation that households will provide service to the community (servicio a la comunidad) has been largely replaced with an expectation that they will provide a fee for service (pagar por el servicio) to the municipality. This includes a household reliance on municipal government to administer and maintain public waterworks. This shift of local governance authority from traditional community institutions to formal state institutions has been consistent in the lake basin and surrounding region over the past two generations (Seminario de Integración Social Guatemalteca 1968) and is linked to the economic and demographic transformations described above. In Panajachel, as well as in some of the nearby villages, the traditional cofradía system that formalized and honored service to community is dying out as many men in the next generation refuse to assume the positions of responsibility (cargos) this system entails. As more people move from an agricultural livelihood to the wage labor market, families also have less flexibility to provide their own labor as service.

The waning of collective work also entails a loss in social interaction, a form of “disembedding” that reflects both state and market influences (McCay and Jentoft 1998). For communal waterworks, the annual day of maintenance not only enacted and reinforced community bonds as residents worked side by side on the canals and prepared food for the day. It also provided an immediate transparency in decision making over the project itself and consequently a sense of
Changes in the physical infrastructure of water supply have contributed to the changing character of community interaction. When piped water was first introduced by the municipality, it fed several wealthier households and businesses directly, as well as neighborhood water reservoirs (pilas) used by most households. The pilas became a new meeting place for women who had drawn water and washed clothes together at the lakeshore. As more individual households gained separate piped water connections, these meeting places waned in significance. At the same time, water use rose quickly. It was no longer necessary to carefully conserve the water that previously was carried long distances. It also required payment of a monthly fee, adding to the growing list of goods and services (including electricity and, for many, food) that had to be purchased rather than produced within the household economy.

**Reasserting Community**

The problem of wastewater management in Panajachel has reached the crisis point over the last two years. Growing awareness has shifted the issue from the realm of everyday municipal management to high stakes politics. By no means resolved, the problem has elicited a range of responses from conflict to community activism and renewed collective action. Of particular concern here are two interrelated processes: the creation of new space for public dialogue and the reassertion of community networks to address the practical challenges of wastewater management.

We use the concept of “reasserting community” to indicate the creation and strengthening of social ties and interactions around common interests. The social composition of the town has changed, new networks have become active, and new divisions have emerged. The nature of the resource management problem has changed as well: irrigation management involved the provision and allocation of water to a set group of users who derived a direct benefit. The benefits from participation in wastewater management efforts are mostly indirect and accrue to the town as a whole (though the economic and the health benefits are unevenly shared). At a broader scale, Panajachel’s failure or success to manage its wastewater pollution problem represents one current in the larger challenge of protecting the ecosystem of the lake and, by extension, the livelihoods and welfare of the people who live around its shores. For each of these reasons, we are not simply suggesting that the old institutions be reinvoked, but that existing networks of community be engaged and new ones formed to meet the present challenges.

In retrospect, the task of building community awareness and dialogue clearly would have been much easier had it begun prior to the planning, design, and construction of the Jucanyá wastewater treatment plant. When the finished plant was turned over to the municipality, the local administration, already faced with deep public skepticism and mistrust, saw it as an added burden. Under pressure from central government to make the project a success, the municipality first employed its conventional approach, by demanding payment from households and businesses for a service that few felt they needed. Faced with noncompliance, the municipality did organize a series of meetings, but, according to many we interviewed, these meetings focused on explaining a requirement as opposed to surfacing a problem and exploring potential solutions jointly. Many of the stakeholders who could have been working together to break the deadlock were more focused on assigning blame to others.

In this atmosphere of intense political maneuverings, we invited, with the approval of relevant authorities, a broad spectrum of stakeholders to the Atitlán Nature Reserve to assess obstacles as well as strategies for joint action. Prior consultations with a variety of local groups made it clear that those familiar with the wastewater problem were becoming increasingly concerned, and there was no functioning forum for these groups to explore how to work together. The premise of the meeting was that, while numerous shortcomings were evident in hindsight, the existing Jucanyá plant represents an important asset for addressing the serious problems of pollution in Panajachel. The political tensions surrounding the treatment plant remained strong—neither the embattled Panajachel mayor at the time, Bracamontes, nor the former mayor who had initiated the project, Lavarreda (who had since become vice minister of the environment), came to the meeting. Apart from this, principal governmental agencies were represented, including the lake authority, Autoridad para el manejo sustentable de la cuenca del lago de Atitlán y su entorno (Lake Atitlán Basin Sustainable Management Authority [AMSCLAE]); official tourism agencies, Instituto guatemalteco de turismo (Guatemalan Tourism Bureau [INGUAT]) and Câmara de turismo (Chamber of Tourism [CAMTUR]), as well as nongovernmental actors, Amigos del Lago (Friends of the Lake) and Vivamos mejor (Let’s Live Better); hotel owners; and other businesses represented by the Grupo gestor (Action/Management Association).

AMSCLAE is a seven-year-old interagency governmental body in which the municipalities of the lake basin, the governor of Sololá, the military commander of the region, and the Chamber of Tourism are represented, along with a variety of NGOs working in the lake basin. Amigos del Lago and Vivamos mejor are both professionalized local NGOs. Vivamos mejor focuses on social services, such as health, education, and community development projects, and receives some external funding. Amigos del Lago, formed initially as a dues-collecting association to advocate the interests of the owners of upscale lakefront homes, is now helping to develop a master plan for the lake. Grupo gestor primarily represents major businesses in Panajachel, though its membership has expanded to include some small operations, such as those that dig sand from the riverbed to supply the construction industry.

For many of those gathered, it was the first opportunity to construct a comprehensive picture of the problem, with experts on hand to provide details of water quality conditions and...
health effects, the plant’s operations, the extent of participation in the sewage system and the fees generated, as well as a detailed accounting of the actual costs for plant operations and maintenance. The format of the gathering, particularly the recounting of the history of public actions and accounting for the use of funds, and the opportunity for any participants to question and probe the presenters, paralleled the way communitywide meetings are still conducted in many of the K’aqchikel towns around the lake. The information shared in the forum made clear that the plant’s operations were being heavily subsidized by the municipality and that even with full compliance, the current fee structure was inadequate to cover the plant’s long-term maintenance. Participants also sketched out what they saw as plausible effects on the town’s economy if failure to definitively address wastewater pollution should lead to a dramatic drop in tourism. Through these elements, the forum provided an incremental step in clarifying the domain of shared interests among the groups represented, as well as increasing the level of trust.

Participants agreed on two guiding principles: 1) polluters must pay, and since all residents contribute wastewater, all should pay; and 2) those who draw their income from tourism have a higher ability to pay and an obligation to protect the tourist destination—they must, therefore, contribute in proportion to their income. Meeting participants endorsed the following statement:

It is clear that those who use the plant more and derive more economic benefit from its operation should pay a higher fee for the service than simple residential users. These differential fees should be based upon transparent criteria and should be made publicly known and developed jointly with those who will have to pay these fees (Rivera 2001).

Participants also agreed on a proposed alternative fee structure that differentiates among businesses according to the prices they charge their customers, increasing the burden on higher-end hotels and restaurants. Grupo gestor, while strongly endorsing measures to address water pollution, was at first hesitant about raising fees levied against the more expensive hotels. The group eventually did endorse the new fees, however, convinced that business interests were at stake. The group’s main representative, the manager of the Hotel del Lago, in effect endorsed a fivefold increase in fees to his own business. If fulfilled under this schedule, user fees would cover over half the costs of operations and maintenance (disregarding future plant replacement costs), a fourfold increase from the amount of fees currently collected (though still requiring a substantial subsidy from the municipality). While by no means resolving equity concerns, the new proposed fee plan also reduces the equity gap. The three most exclusive hotels would together pay fees equal to nearly 1,200 household users.

The forum, along with documents that circulated before and afterward, generated a new commitment among many participants to build partnerships among government, civil society, and the private sector to address the challenge. As an example, Amigos del Lago, having learned of the specific conditions of the plant in preparation for the meeting, contacted a company in Canada about the ultraviolet bulbs that had gone unreplaced and explained the financial difficulties of the municipality. The company agreed to provide a one-time free set of replacement bulbs, valued at over $2,000. More important than such in-kind contributions over the long term is the role NGOs and business associations are beginning to play in generating broader public support for and participation in wastewater treatment efforts.

The role of the municipality also shifted markedly toward engaging this sort of community participation with the installation of a new mayor, Enio Urizar, in early 2002. Urizar, a schoolteacher, has ties to the grassroots civic committee that elected Bracamonte. In his own words, it works “to strengthen civil society” by organizing to address problems at the neighborhood level (interview, March 11, 2002). Describing the election of his predecessor, he says “no one believed” that this grassroots movement would ultimately elect the municipal government in a race against organized national political parties. While embracing this commitment to the needs of the town’s disadvantaged residents, he is also careful to distance himself from the confrontational approach adopted by his predecessor. By comparison, he says, “I am more politically attuned, in the sense that I work on the basis of consensus, with community participation.”

This participatory, community-based approach has already proven remarkably successful in overcoming the deadlock of noncompliance in household connections to the wastewater treatment system. On the basis of an understanding gained from discussions with residents of the narrow alleyways and fringe neighborhoods where exposure to open sewage is worst, Urizar and his team tackled the problem through collective rather than individual commitment. Many residents had voiced concern that the individual cost of connecting to the system was too high and that, in any case, the health benefits would only come to the neighborhood when everyone was complying.

Under the new agreement, neighbors must form an alley committee in which all alley residents commit to connect to the sewage system. They must establish as well that all neighbors are up to date in payments for water supply and trash collection, along with the new sewage fee. The municipality provides plastic tubing to the residents, who are responsible for digging the channels and installing household and alley drainage lines that connect to the main system. As with traditional waterworks maintenance, those who do not provide their own labor may pay for someone to work on their behalf. As an added benefit, once the connections are completed, the municipality provides concrete tiles to pave the alleyways, which residents value as a significant improvement.

In March 2002, three densely populated alleyways were working with the municipality under this type of agreement to connect 185 additional families to the system. Community members felt they were investing in their own well-being,
improving their neighborhood, and helping solve the larger problem of pollution in the town as well. Many who supported this work in Panajachel claim, moreover, that where committees have formed to meet this shared problem, social networks have improved capacity to address other problems of collective action.

In parallel to this organizing in residential neighborhoods, business associations like the Asociación de comerciantes de Panajachel and the Grupo gestor are beginning to apply similar principles of collective responsibility and mutual accountability so business owners in specific sectors (hotels, restaurants, shops, etc.) will increase compliance and assume the costs of wastewater management. When viewed collectively, the economic rationale behind paying for a cleaner environment is overwhelming. As one active member of the hotel owners’ group put it, “When we press for people and businesses to connect up to the wastewater treatment system, some say that we’re being politicians, but we simply want tourism to continue in Panajachel…. We just want to do business” (Manuel Pinzón, interview, March 10, 2002).

Discussion

This case provides an example of processes of community disembedding and rebuilding that call for more refined analyses than implied by a priori assumptions about the negative effects of state intervention or market integration. Community is not a fixed social unit, but a network of social interactions that are continually remade. When state administration reduces the space for social interaction around the commons, these networks erode. In Panajachel, local administration has taken over responsibility for municipal water provision and for maintaining the waterworks infrastructure. Community members no longer need to engage in relationships with neighbors around most of the decisions and practical work that this shared resource once required. Along with transformations in the town’s economic base, new collective challenges require new expressions of community.

Notably, the state and market are each implicated in both the erosion and the rebuilding of community institutions responsible for managing and preserving Panajachel’s common resources. The same formal structures of municipal government that in recent decades displaced community networks focused on the common waterworks are now, in new hands, actively supporting opportunities for strengthening networks of collective action at the neighborhood scale and beyond. The expansion of tourism-related businesses, responsible for the transformation of Panajachel’s traditional agricultural economy and associated changes in the town’s social, religious, and ethnic composition, is eroding the traditional structures of Mayan civic-religious governance. At the same time, the welfare of the community broadly depends on preserving the basis of the tourism market. The business networks that have grown to protect this common interest include the largest hotel owners as well as street vendors and sand collectors with very limited resources.

On what does this reassertion of community depend? One often-repeated claim is that sustained patterns of collective action to maintain the commons tend to be associated with communities that are small, traditional, and homogeneous by virtue of ethnic, cultural, and religious identity (e.g., Trawick 2001). In our judgment, however, framing the issue in these terms misses the underlying basis for the creation and maintenance of the commons, which is not general identity but rather the strength of shared interests—things valued in common—even among people with diverse characteristics. Networks of community are based upon shared interests and the relationships that form around these. We do not mean to discount the importance of ethnic, religious, cultural, and economic diversification: in Panajachel, all of these make more challenging the task of identifying shared interests and sustaining relationships that span the various groups within the town. Homogeneity, however, cannot be considered a precondition for cooperative action to maintain the commons.

The key element that links the promising recent efforts by government, civil society, and business associations to address the problems of wastewater management in Panajachel is an explicit attempt to identify a common interest that bridges diverse social groups. Earlier attempts to address the problem were restricted to very limited social networks within the town. The few business leaders who recognized the problem in the early 1980s complained to local authorities but otherwise kept the conversation essentially among themselves. The mayor who commissioned the treatment plant was effective in engaging external finance and technical support but had neither the orientation nor the capacity to engage a public dialogue in the town itself. Likewise, the specialists contracted to design the plant were neither assigned nor prepared to consult broadly to understand the nature of the problem or explore alternative technological solutions with the local population. Even the government body specifically assigned to facilitate stakeholder collaboration to protect environment and livelihoods in the lake basin had been largely ineffective.

By contrast, the recent actions we have characterized as a reassertion of community have begun with conversations that engage a broad range of networks. These include networks defined by common economic interests, such as the larger tourism businesses that dominate the Grupo gestor, smaller business owners represented through the commerce association and the boat-owners association, as well as small merchants and wage workers. They include networks defined by place, representing the diversity of neighborhoods within the town, which include poor and densely settled alleyways as well as groups of lakefront chalets with expansive gardens. They include networks, in particular the civic committees, formed previously in response to a shared interest in specific problems ranging from the need for a health center to garbage collection to rebuilding the library. And they include networks of shared interest that extend well beyond the town itself, such as those focused on environment and sustainability at national and international scales, in which some of the larger
NGOs, government agency staff, and some foreign and local business owners participate.

Conclusions

Underlying the apparently straightforward financial obstacle to operating and maintaining the Jucanay wastewater treatment plant is a challenge that runs much deeper, an initial failure to “build” the social and organizational foundations for project sustainability. This failure probably exacerbated conflicts in Panajachel after the plant’s inauguration, but growing recognition of the critical importance of the problem to the town’s social and economic welfare has subsequently opened avenues for public dialogue and community action. The theoretical implication of this analysis—the need to recognize the potential of state and market institutions as forces that may both erode and rebuild community—is matched by an equally important practical lesson. The planning, maintenance, and operation of public infrastructure projects need to be integrated into a process of community building by identifying shared interests and forming or strengthening the relationships needed for collective action.

Leaders of business, community organizations, and local government in Panajachel are facing this question: how can the social relationships and shared values to address wastewater pollution be cultivated once the physical infrastructure is already in place? Remarkably, even the engineer who designed the plant has concluded, reflecting on his experiences in Panajachel and with plants elsewhere in Latin America, that while selecting appropriate technology is important, social organization must be considered the overriding determinant of a project’s success (Philippe Conil, BIOTEC, personal communication, October 2001). “The residents in the area of a water treatment plant have the political power to paralyze the project,” he has written recently. “Rightly, this obliges the public sector (and private developers) to work better and to take account of citizens. There must be a process to educate and involve the community” (Conil and Salazar 2002:15).

Even if judged by such criteria of consultation and participation, now broadly acknowledged at least in principle in the field of development planning and administration, the Jucanay wastewater treatment project falls far short. The project we have analyzed lacked input from and consultation with community members even on narrow questions such as the proposed fee schedule. Indeed, even the contact made with local government was inadequate to plan appropriately for operation and maintenance of the facility, let alone to discuss the upstream questions related to choice of technology. There was also no systematic popular education or awareness campaign about the effects of wastewater pollution or the rationale for the project. In one respect, these facts are not surprising: even if development planners now commonly acknowledge the importance of awareness building, consultation, and community participation, the costs for these activities are rarely internalized into the budgets for infrastructure projects—and they ought to be (Conil and Salazar 2002:17).

Our argument, however, is more than a reaffirmation of the need for consultation or participation in the typical sense that these are employed as tools of development planning and project management. More fundamentally, what planners responsible for the wastewater treatment project lacked at the outset was an ethical commitment and practical capacities to participate in the making of community around shared interests defined and recognized by local actors. For all the difficulties it entails in a context of rapid social and economic transformation, the longer-term prospects for addressing wastewater management in Panajachel depend on the ability of local residents to reassert community ownership and collective responsibility. The expressions of community emerging today—in neighborhood committees, business associations, and municipal work projects—differ from prior patterns of collective work focused on the irrigation waterworks. But the challenges are in many ways parallel. The realignment of community institutions underway in Panajachel is far from settled. However, the moves toward reasserting community are significant, particularly in the midst of Guatemala’s troubled postwar reconstruction, where the challenges of rebuilding social ties and faith in government remain huge.

Scholars and practitioners of development need to be able to critique—and hopefully avert—processes of community disembedding that threaten local livelihoods, and we also need to be able to identify and support processes of community building. The analytical dimension of this work requires an appreciation of the potential of both state and market forces as threats to as well as opportunities for a reassertion of community networks necessary to maintain the commons. The practical dimension of this work requires, in addition, a distinct ethical commitment that recognizes the paramount role of community in social change, combined with capacities to act on that commitment.

Notes

1Rivera founded and heads the Nature Reserve, while Ratner assisted with establishing some of the collaborative programs with neighboring villages in 1989-1990. Rivera also leads the HECUA semester abroad program on Environment, Economy, and Community in Latin America, which Ratner joined as visiting faculty in 2001 and 2002 during the program’s residence at Lake Atitlán.

2Hinshaw reported the 1964 population of Panajachel variously as 2,779 (Hinshaw 1968) and 3,268 (Hinshaw 1975). The proportion of ladino residents, slightly more than one-third of the total population, remained nearly unchanged from data for 1936 collected by Tax (1953).

3The plant had actually been completed and put into service during the administration of the prior national government, under the rule of the Partido de Avanzada Nacional.

4Escherichia coli is a form of fecal bacteria used to indicate the possible presence of pathogens that cause skin, respiratory, and gastrointestinal diseases in humans. Independent monitoring of surface water has found concentrations of E. coli in excess of 2,400 per 100 milliliters (Castellanos et al. 2002). By comparison, national standards adopted by the U.S. Environmental Protection Agency (1998) consider
E. coli concentrations above 126 per 100 milliliters unsafe in freshwater recreation areas. One irrigation ditch that flows into the river near the public beach was measured with concentrations of 360,000 per 100 milliliters, according to an analysis commissioned by the nearby Hotel del Lago, the largest and most expensive resort on the lake.

Bramamonte’s election actually marked a turning point in local politics. He came to power on a local ticket that upset candidates backed by the national political parties. While he was unable to build on this local support to address collective challenges in the town, his successor, Enio Urizar, proved much more adept at this task. This shift in the role of local administration is discussed later in the text.

For an overview of changes in Panajachel during the early period of this transformation, see Hinshaw (1968, 1975), who draws direct comparisons with the community in the 1930s (Tax 1953).

The hierarchy of lay officials elected annually was also responsible for patron saint fiestas as well as services such as funerary, police, and garbage collection (cf. Cancian 1965).

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