

Participatory Political Ecology: Contributing to Community Control over the Shrimp Farming Agenda in Pearl Lagoon Nicaragua.

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Abstract

This paper identifies a form of participatory action research (PAR) that integrates the techniques of political ecology into the context of a rural community's decision making processes for resource use. It focuses on the case of the Pearl Lagoon Basin in Caribbean Nicaragua and the impacts of a shrimp farming information seminar that was organized at the request of the communities by the Coastal Areas Monitoring Project and Laboratory (CAMP-Lab) - a Participatory Action Research (PAR) project working in the area since 1994. The seminar involved sixty people including community leaders and representatives from various levels of government who were provided an opportunity to learn about the experiences of shrimp farming as it has occurred in other parts of the world. In addition to the seminar, the information content was also transmitted to the wider Pearl Lagoon community on radio programs, in a news letter and through community meetings in the villages surrounding the lagoon. The most important result of these activities was that local people - both in the formal setting of the seminar, and the informal setting of daily conversation - began to transpose the experiences of shrimp farming in other parts of the world to their own unique political economic and environmental context.

Introduction

This paper describes the experience of a two day seminar on Shrimp farming that took place in the Pearl Lagoon Basin in Caribbean Nicaragua during November 2002. The event was organized by the Coastal Areas Monitoring Project and Laboratory (CAMP-Lab) in response to the community's desire for information about shrimp aquaculture. In this paper we review the experience of this seminar from its genesis to the post-seminar follow up and explore the implication for both political ecology and participatory action research (PAR).

The paper begins by outlining the setting of the event including relevant geographic and historical information about the area and the context of the CAMP-Lab project that facilitated the seminar. The second section reviews relevant political ecology and PAR literature and their possible synergies and relevance to this experience. The third section outlines the shrimp farming seminar including its genesis, the event itself, and the follow up activities. Finally, the paper makes the argument that this seminar on shrimp farming in Pearl Lagoon represents a potentially powerful and previously unidentified form of PAR that integrates the focus and methods of political ecology; and examines the circumstance that contributed to the viability of the methodology in this case.

The setting

Geographic and Historical

Pearl Lagoon is located about 55km north of Bluefields in the South Atlantic Autonomous Region (RAAS). The basin of Pearl Lagoon is 5,200 square km containing a rich endowment of natural resources and a diverse set of cultures and religions. There are twelve communities surrounding the lagoon with a total population of approximately 6,500 inhabitants. There are four main ethnic groups in the area: the Miskitu, Creole, Garifuna and Mestizo. Economically the inhabitants are largely dependent on natural resource extraction including a mixture of fisheries, agriculture and forestry. The ecosystems of the region are diverse, including lowland rainforest, swamp forest, pine savanna and mangrove, as well as rivers and the lagoon itself.

The Caribbean coast of Nicaragua, including Pearl Lagoon, has perpetually existed on the margins of Nicaraguan society. Throughout its history the multi-ethnic communities of the area have resisted - with varying degrees of success - domination by the predominantly Spanish speaking Mestizo government in Managua. The region has historically had strong ties to the United States and earlier the British, through their colonial and military presences, and a series of multinational industries that have extracted various natural resources from the area on a large scale resulting in a succession of boom and bust economies focused on single resources (Vernooy 2000; Vilas 1989; Dozier 1985).

The Sandinista revolution during the 1980's represented a period of significant change throughout Nicaragua, resulting in increased space for political participation and

improvements in social programs and education. However, during the early years of the revolution the historic tensions between the Caribbean coast and western Nicaragua and the lack of sensitivity of the Sandinista government to the unique history and traditions of the area led to the region becoming one of the main arenas of the Contra war (Christie et al. 2000; Gordon 1998; Hale 1994).

The eventual realization by the Sandinista government of the futility of armed conflict in the area led to a process of negotiation between local communities and the central government that in 1987 resulted in Autonomy Law #28. On paper the Autonomy Law gave significant political autonomy, recognition of its cultural diversity, and control over resources, to the Caribbean regions. The national constitution also recognizes the multi-ethnic nature of the coast and grants rights to the people of the area to preserve their culture and language and to benefit from the area's natural resources. In practice, however, the devastation of Hurricane Joan in 1988, the electoral defeat of the Sandinistas in 1990 by the National Opposition Union Party (UNO), and the subsequent election of the Liberal Alliance Party (PLC) in 1996 and 2001, combined to prevent significant implementation of the autonomy law or constitutional guarantees. The successive neo-liberal governments have worked to erode the rights promised within the Autonomy Law in the name of national progress and the championing of a neo-liberal agenda focused on securing export earnings and satisfying various international financial institutions (Christie et al 2000; Gordon 1998; Gonzales 1997; Vernooy 1992).

The national and international trend towards economic liberalization and privatization has led to a situation in Pearl Lagoon wherein the ecosystems on which local people have traditionally been dependent are being eroded by increased extractive activities for international markets. Local mechanisms for controlling resource use in the area have either been eroded or have been unable to keep up with the pace of change in resource use patterns. While the regional government has some interest in protecting ecosystems of the coast, it suffers from a lack of resources and legal uncertainty about its exact mandate. In addition, national level institutions with responsibility in these areas have their agendas set by national and international policy priorities that stress the importance of securing the foreign exchange that can be earned through the exploitation of resources like those available in Pearl Lagoon (Bradford et al. 2000; Hostetler 1998). Nevertheless Pearl Lagoon continues at this time to have a viable artisanal fishery that includes white shrimp (*P. schmitti*), sea bob (*Xiphopenaeus kroyeri*) and variety of scale fish that directly or indirectly provide a large part of the livelihood for most people in the community.

The Project (CAMP-Lab)

The Coastal Area Monitoring Project and Laboratory (CAMP-Lab) is centered in the village of Haulover just south of Pearl Lagoon Town. Currently in the second year of its third phase, the CAMP-Lab project was initiated in Pearl Lagoon in 1993 through the efforts of an M.Sc. student from the University of Michigan and a local marine biologist working with a marine laboratory located in Haulover.

From its beginnings CAMP-Lab has had as the core of its research methodology Participatory Action Research (PAR). In practice the use of PAR for CAMP-Lab has meant a focus on efforts to collectively produce and interpret knowledge about the local environment with groups of interested people in the community. Ideally this knowledge then provides a basis for local people to have an increased say in the way in which the natural resources on which their communities depend are used and managed (Christie et al. 2000). CAMP-Lab's efforts in this regard have focused on working with the people of the Pearl Lagoon communities to establish and implement a management plan for the natural resources of the Pearl Lagoon Basin that has a basis in their interpretations and understanding of the resource problems as well as their needs. As part of this effort, CAMP-Lab works to increase the local communities' capacities for conducting research relevant to the creation and implementation of a management plan that will help them better analyze their situation; and to develop local people's capacity to engage with business and various levels of government in meaningful dialogue about the future of their communities and natural resource base. Recently, CAMP-Lab has utilized popular communication methods including the use of a community run radio program and a Creole language news letter that focus on local environmental issues (Hostetler 2002).

The current (third) phase of the project is funded by the IDRC and is institutionally a partnership between CIDCA-UCA in Nicaragua and York University in Canada. York University's commitment to the project includes participation by graduate students and faculty helping within the facilitation of various activities, and providing skills and expertise that compliment the abilities and efforts of Nicaraguan CAMP-Lab staff and local people (Found and Hostetler 2002; Found and Hostetler 2001; Bradford et al 2000).

Relevant Literature

Political Ecology

There is a broad range of scholarship that falls within the field of political ecology (Peet and Watts 1996). This paper is most relevant to political ecology that takes a politically engaged actor centered approach such as that advocated by Bryant and Bailey (1997), but it also has relevance to discursive approaches advocated by Pete and Watts (1996).

Bryant and Bailey (1997) suggest that as research field political ecology "seeks to explain the topography of a politicized environment, and the role diverse actors play in the 'molding' of that environment, so as to better assist those actors in society who are fighting for social justice and environmental conservation" (p. 195). It is hoped that this type of analysis will help to identify possibilities and opportunities for transformative action within the context of these relations (Bryant 1997).

According to Bryant (1997) there are two key elements that are important to a "'politically engaged' Third World political ecology" (p. 12). The first element is the need for exposure and critique of the way in which powerful political and economic actors in society benefit disproportionately from environmental degradation, demonstrating the contradictions between their public face and their private actions. The

object of this activity is to pressure these actors to alter their environmental practices by publicly challenging their versions of events.

The second element of a 'politically engaged' political ecology according to Bryant (1997) is the encouragement of a counter coalition involving grassroots groups coordinating with other sympathetic actors to help move towards more socially just and sustainable alternative environmental management systems. Bryant (1997) sees the political ecologist's role as engaging with the construction of alternatives to the status quo that are at the same time rooted in the present social, political and economic realities (Bryant 1997; Bryant and Bailey 1997). As Bebbington (1996) argues, effort towards these ends should work towards "short-term, pragmatic, and realistic responses that work from contemporary contexts", and reflect and build towards the desires and aspirations of local people in the longer term (p. 105).

In addition to its relevance to engaged actor centered political ecology, the participatory nature of the analysis described in this paper also lends itself to addressing concerns about understanding the complexities related to the plurality of environmental perceptions that are of central concern to advocates of the discursive approach to political ecology (Peet and Watts 1996). Issues such as how, different environmental knowledge and practices are privileged and institutionalized and how facts regarding the environment are contested in society are at least partly revealed through the participatory research experience that is the focus of this paper.

Participatory Action Research (PAR)

While there is a diversity of PAR methods, (Selner 1997) there are some key features that have served to guide CAMP-Lab's efforts and are therefore of the most relevance to this experience in Pearl Lagoon. The first consideration of CAMP-Lab's PAR effort is a focus on research results that contribute to the reduction of oppression and social problems. This focus leads to questioning the appropriateness and adequacy of traditional scientific methods and reductionistic social science in identifying oppressive circumstances. It calls for a more equal treatment of other methods of knowledge generation. As a result, PAR sees research as a co-learning project including on an equal basis both professional researchers and local people with each contributing their own skills, knowledge and understanding in order to provide a richer understanding of the problem being studied. Finally, PAR focuses on the idea of praxis that links analysis with action as part of the process of generating knowledge (Christie et al. 2000; Freire 1993).

While some early PAR efforts adopted the use of these methods and championed the central role of local people in development efforts in an overly optimistic and uncritical fashion, this is not the case for much of the current work in this field. Critiques of participatory research such as those offered by Kapoor (2002) that are rooted in concerns about inclusiveness, legitimacy, justice and power within participatory projects are important and need to be considered within the context of PAR research design, implementation and evaluation. These concerns are addressed by McAllister (1999) and McAllister and Vernooy (1999) who offer useful guidance to assessing the scope, and

quality of participatory research focusing on the goals of community based resource management (sustainability, equity, local empowerment, poverty alleviation, etc.) while also addressing issues of power, representation and divergent interests amongst various actors within the PAR process itself. While not to be adopted uncritically, a focus on local peoples' roles in transformative processes, and the appropriate use of participatory methodologies to this end can both play a potentially important role in elaborating more sustainable and just alternatives to the status quo than those that might evolve without the presence of these methodologies.

Political Ecology and PAR Synergies

The potential usefulness of participatory research methods within the context of engaged political ecology has not been lost on Bryant and Bailey (1997) who argue for a systematic integration of the practical implications of participatory research into future political ecology work to help better reflect the "practicalities of political engagement" (p. 196). In addition, depending on the depth, breadth and nature of participation, PAR has the potential to reveal complexity rooted in the plurality of environmental perceptions that is the concern of advocates of the discursive approach to political ecology.

This work moves beyond simply integrating the lessons of PAR into political ecology as suggested by Bryant and Bailey (1997). Instead, we suggest that analysis rooted in the concerns of political ecology can be done by local people, simultaneously providing productive avenues for action that contribute to the transformative objectives of PAR i.e. reducing oppression and social problems through praxis.

The Shrimp Farming Seminar

Genesis

In the summer of 2002 Pearl Lagoon people were hearing rumors about the possible introduction of shrimp farming in the area by the company running the local seafood processing plant (Mar Caribe). As a result of this, the issue of shrimp farming was increasingly on the minds of local people and they began contemplating and debating the possible impact of this type of activity in the area. While opinions about the possible benefits and problems associated with shrimp farming differed two key concerns were evident first, people clearly felt that they did not have an adequate understanding of shrimp farming to make informed decisions about its desirability for their communities; and second, the majority of people did not completely trust either the processing company or the local authority to work in the best interest of the people of Pearl Lagoon.

Within the context of these community discussions CAMP-Lab staff was asked for their opinions on the subject. Recognizing their equally limited knowledge of shrimp farming, CAMP-Lab staff along with a Canadian graduate student working with the project began developing the idea of an information seminar to increase local awareness of both the problems and benefits associated with this activity. CAMP-Lab staff in Nicaragua began looking for support both for funding, and providing content for such a seminar. At the same time CAMP-Lab's partners at York University in Canada initiated library and

internet research in an effort to develop materials for the seminar and locate outside support.

The central objective defined for the seminar was to provide the communities of Pearl Lagoon with accessible information about the potential social, environmental, and economic impacts of shrimp farming on their communities so that they could engage with groups interested in this activity for the region in a more informed and cohesive way. This was to be accomplished by: 1) providing participants with visual and descriptive examples of other communities' experiences with shrimp farming in different global locations, 2) providing accessible data about shrimp farming experiences in other locations including scientific and socio-economic data, and 3) giving community members space to voice their uneasiness and ask questions about shrimp farming to experts with detailed knowledge of the subject and the decision makers ultimately responsible for deciding the future of shrimp aquaculture in Pearl Lagoon.

The resulting seminar was held October 21-22, 2002 facilitated by CAMP-Lab and funded by the Swedish NGO ASDI through the Pearl Lagoon Mayors office. In addition to the financial support provided by ASDI, UCA (CAMP-Lab's institutional home) provided a shrimp farming expert from its aquaculture research facility in Puerto Morazan; the local universities URACCAN and BICU both provided local aquaculture specialists with Masters level training to add content. Key materials for the seminar were acquired or developed by the project's partners from York University including, a video (Shrimp Fever)¹ illustrating the impacts of shrimp farming in Ecuador, and posters providing images of the shrimp farming process and asking crucial questions for consideration by seminar participants.

The Event

The seminar began traditionally with a prayer by an elder and introductions of those present. There were roughly 60 people participating in the seminar. The group included at least two people from each community in the lagoon, the mayor and vice mayor of the municipality, regional councilors, representatives from: the central government – ADPESCA (fisheries) and MARENA (environment); municipal and regional natural resource authorities; local universities URACCAN and BICU; the local radio station; and the company, Mar Caribe, wishing to develop the farm.

After the introductions of the participants CAMP-Lab staff introduced the video "Shrimp Fever" detailing the experience of shrimp farming in Ecuador during the 1980s. A representative of Mar Caribe stated before the video began that it was a video on "how *not* to do shrimp farming" The company planned to use farming methodology based on a sustainable method being developed in Belize. The participants from the company left the seminar while the video was being played. Encouraged by the workshop participants and organizers the Mayor contacted the company by radio asking them to return and explain their proposal². The company chose not to accept this invitation. They missed a

¹ This film was donated free of charge by

² Time for the company to present their plans had been programmed into the event from the beginning.

good opportunity to explain to a broad cross-section of the community the proposal for the farm and how the method is different and more sustainable than previous shrimp farming efforts elsewhere in the world. This refusal to participate on the part of the company served to aggravate other participants (who saw this behavior as disrespectful) and tended to increased people's suspicion about the motivation and sincerity of the company.

After the video was finished there was an unplanned round of comments and questions, and for the first time the voices of the communities were heard. Expressed in, nondeceptive, direct Creole English with cheers, agreements and applause from other participants the concerns of the community were raised. The main issues brought up were 1) the desire for proof that local people, and not just the farm owners, would get benefits from shrimp aquaculture; 2) the possible destruction of local ecosystems that currently support fisher people; 3) the concern that shrimp aquaculture would be a repeat of other experiences with extractive industries (i.e. bananas and lumber) that provided jobs in the short term but environmental destruction further in the future; 4) development of shrimp farming may aggravate ongoing and contentious land claims issues; 5) what would become of the farm and the land when the company eventually abandons it.

After the video, discussion and lunch participants formed into small groups. In these groups they answered four questions prepared by CAMP-Lab staff prior to the event designed to stimulate thoughts on the problems and benefits of shrimp farming in Pearl Lagoon. These questions were:

- 1) Who could gain what from shrimp farming in Pearl Lagoon?
- 2) Who could lose what from shrimp farming in the Pearl Lagoon?
- 3) How would shrimp farming change the environment in the Pearl Lagoon?
- 4) What kinds of conflict could shrimp farming create or make worse in the Pearl Lagoon?

Each group had a facilitator from CAMP-Lab, although more often than not the facilitator did little more than ensure everyone had a chance to contribute. In most cases one of the community members took over facilitating.

When the small groups presented to the large group – the issues people felt to be most important were repeated. The collective reactions to the questions for the group were as follows:

- 1) The general consensus was that those who would gain were the investors, the technical trained employees, the authorities responsible for granting permission and collecting taxes, and possibly a few people in the communities.
- 2) The loss would be mainly to the communities in general, artisanal fishermen, the children and women. Also possible loss of community territory, degradation of the ecosystem, and loss of habitat for wildlife mentioned.
- 3) The environment would be changed by destruction of land, contamination of water, habitat loss and thus a decrease in biodiversity.
- 4) The possible conflicts that were noted revolved around issues of economic distribution. It was believed, the price paid for wild-caught shrimps would decrease as the local market was flooded with farmed shrimp, corruption would increase and there

could be violence among community members over the benefits of shrimp farming. Also there was concern over the implications of shrimp farming in terms of land claims issues.

The general conclusion of this session was that the people did not have enough information to be able to decide “yes” or “no” to a shrimp farm. They had heard a lot of negative aspects of shrimp aquaculture and few positive ones. The attendants wanted more information, to enable them to make informed decisions. One active participant in CAMP-Lab’s activities stated that “*in Nicaragua all they do is exploit people here*” and that we should “*think deeply over how it really should be*”. A number of people requested more workshops to learn more from different experts.

The main topics of contention were again evidenced on Tuesday morning during reflections and comments on the previous day’s happenings. Comments on government and the decision making process made it very clear that: (1) the people wanted the government to be transparent and, more importantly, (2) the decision whether or not to have a shrimp farm was not the government’s decision, but the people’s decision and finally, (3) if a farm is approved it must be sustainable, environmentally friendly and be able to exist for generations so the land would not be ruined for future generations.

The next speaker, a shrimp aquaculture researcher from the UCA, recounted his experience with shrimp farming in Puerto Morazan on the Pacific Coast of Nicaragua. Scheduled to talk for an hour and a half total, his talk lasted an hour and he was questioned by participants for an additional hour and a half. Some of the language he used was too technical for some participants, but most did not have a problem. His talk concluded the educational part of the seminar and at the end people concluded they were *not* ready to say yes to shrimp farming. The director of investigations at BICU (also an aquaculture specialist who studied at Puerto Morazan) suggested that the universities and the government should get together to try an experimental shrimp farm and pledged his university’s cooperation. This comment was replied to by one man who said thank you but no, we need to have more studies, more meetings, and hear more experts before we do a pilot project: this “*seems as if it needs to be studied out good*”.

The event ended with closing remarks and thank-yous from the various participants. People were grateful that they chance had been created for them to know more about shrimp aquaculture before a farm was approved and built; before they were exploited. The people seemed to think that this was one of the first times they had ever been consulted in advance over whether they wanted a new industry. The vice-mayor, always one of the major promoters of the shrimp farm, was also recorded on tape as saying that “*So no decision will be taken outside of your participation. And I think that’s why your here because we are thinking of taking a decision yes or no and we want to have your participation inside this decision.*” His words were published in the CAMP-Lab newsletter – in an effort to increase his accountability to the people.

Post-Seminar Activities

The CAMP-Lab radio program, (part of CAMP-Lab's popular communications efforts), dedicated a show following the seminar to the topic of shrimp farming, playing a number of taped segments from the speeches and talks given by different people in the seminar and examining many of the issues raised in the seminar. This program was broadcast over the entire lagoon and municipality. Another local radio personality, who attended the seminar, dedicated two complete one hour shows to shrimp farming, further informing the communities about what took place at the seminar. In the week following the seminar CAMP-Lab staff visited all the Pearl Lagoon communities with the posters and the video (the video was only useful where there was electricity) providing a mini-version of the shrimp farming seminar lasting an hour (two with the video) and covering much of the relevant information. Finally, the following edition of CAMP-Lab's Creole language newsletter Awake was dedicated largely to the issue of shrimp farming providing yet another channel for local people to acquire more information about the subject.

Conclusions

The experience of this shrimp farming seminar in Pearl Lagoon moves beyond the idea of engaged political ecology informed by the experiences of PAR into a previously unidentified PAR political ecology hybrid that we will call participatory political ecology. The experience fits the basic model of engaged political ecology research in that the collective analysis conducted by seminar participants focused on the participants' understanding of unequal power relations in Pearl Lagoon and the likely implications of this proposed activity in distributional and environmental terms. In addition, the reaction of various participants offers both possible directions for transformative action and also early evidence of effective action. At the same time, the local relevance and pragmatism of the analysis and actions was insured by the fact that they were rooted in local peoples understanding of their own unique political economic and environmental situation and their priorities within it. This also addresses at least partially discursive political ecologists' concern with complexity and the plurality of environmental perceptions.

The seminar fits under the methodological rubric of PAR in that: 1) the idea of the shrimp farming seminar was rooted in concerns and interests expressed by the local people in Pearl Lagoon, 2) any conclusions or actions stemming from the seminar are based in local people's analysis of information provided to them from traditional academic sources combined with their own collective understanding of the local political economic and environmental context., 3) the seminar contributed to praxis as the collective analysis that took place in the seminar has lead to effective action by local people lobbying local politicians and calling for further collective analysis of shrimp farming possibilities in Pearl Lagoon before the activity is allowed to take place. While it is not yet clear what the future of shrimp farming in Pearl Lagoon will be, it is evident that this seminar and the follow up to it has played an important role in increasing people's understanding of and mobilization around the issue. As a result, local people have been able to put more

effective pressure on both business and government to make decisions on the shrimp farming issue in a more just way.

This seminar on shrimp farming provides a good example of a co-learning methodology whereby local knowledge and understanding integrates with more traditional academic expertise to construct a much richer understanding of the problem within the local context. Concerns with the inclusiveness legitimacy, justice and power (Kapoor 2002) of this participatory process are addressed by the openness of the process and its extension beyond the original (and substantial) seminar participants through radio, locally targeted newsletters, and follow-up seminars throughout the Lagoon both in the ongoing efforts of CAMP-Lab and beyond. Furthermore, the analysis and action (praxis) that was stimulated in the seminar is ongoing among diverse community members who continue to seek and integrate new information into their thinking and action.

In this particular case we argue that participatory political ecology has proven to be a powerful tool contributing potentially to greater social justice and environmental sustainability in Pearl Lagoon. There were a number of circumstances that contributed to the viability of the methodology in this case. First, there was an issue that had captured the attention of a large percentage of the population and was of interest to many more. Second, there was an institutional base with sufficient appropriate resources, and presence in the communities to organize the seminar and its follow up. Third, the political setting is such that: the threat of repression and reprisals for organizing and carrying out this type of activity is sufficiently small, and the possibility exists for influencing relevant decision maker's behavior and decisions. Finally, the issue lent itself easily to the collection and dissemination of information about relevant similar experiences elsewhere in the world. These unique circumstances should be considered in any effort to duplicate this experience in other contexts.

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