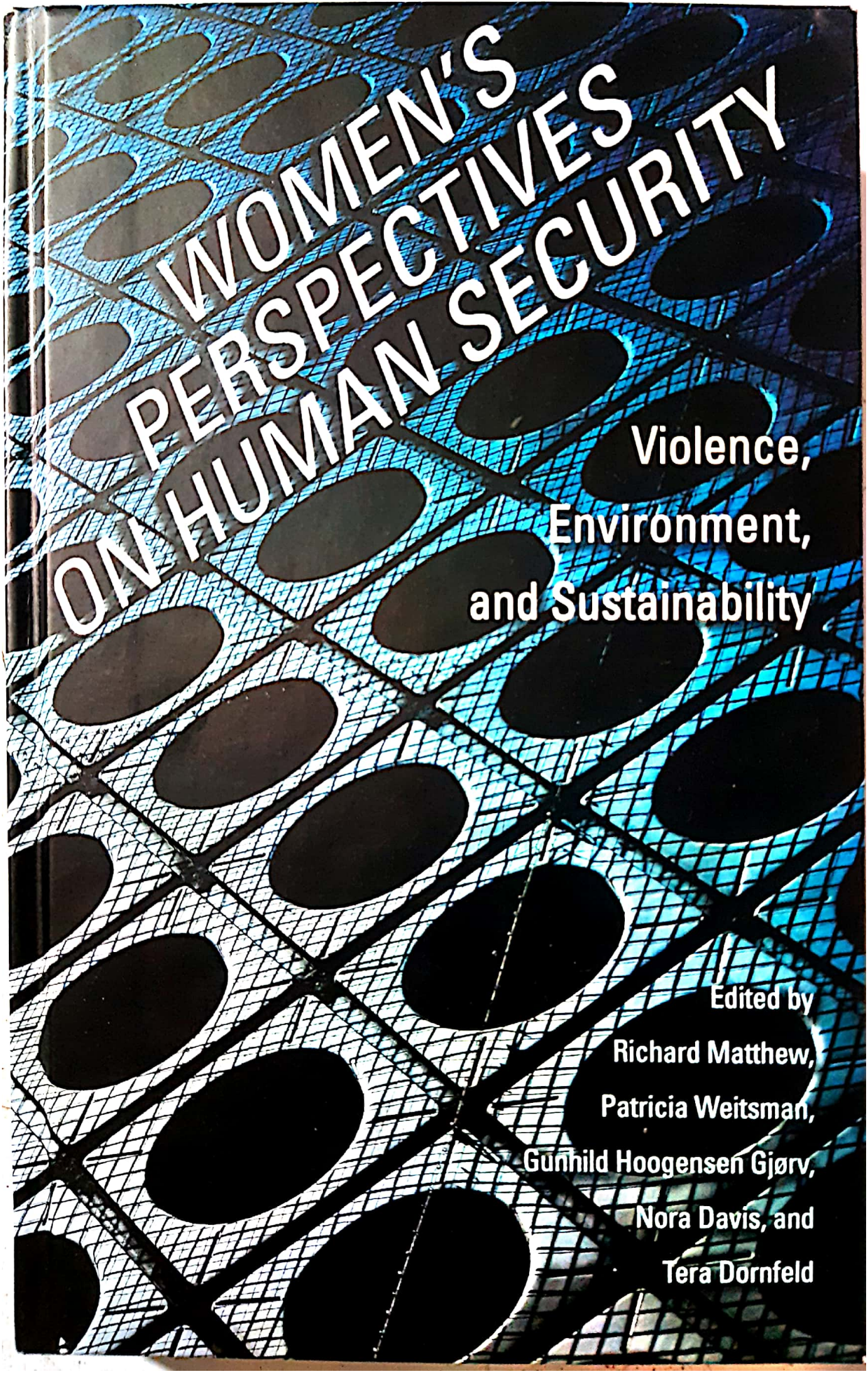

# Contents

PART 2: ENVIRONMENTAL AND ECONOMIC SECURITY

Chapter 10

# Women Building Sustainable Communities

## *Comondú, Baja California Sur, Mexico*

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In the municipality of Comondú, Baja California Sur (BCS), in northwestern Mexico, agricultural and ranching activities have negatively impacted the environment. These activities threaten socioeconomic sustainability and the quality of life for the region's population, affecting rural women in particular. The existing economic model in the region also reflects a lack of coordination among organizations, agencies, and the people themselves—once more, chiefly the women. In this chapter, we present the results of work done through collaborative-action research with a women's group in Ejido 5, a rural community in Comondú. Our research investigated the building of sustainable communities through a socioecological approach. We looked to the socioecological framework as a complement to human security because the approach that we explore specifically champions participatory mechanisms. These mechanisms seek out diverse ways of

knowing, often held by women and those with less political power, and use that knowledge to better understand the interactions between human and environmental systems. Our results underscore why we view the socioecological approach as a necessary complement to current thinking on human security. Further, it aims to demonstrate that women's empowerment is an absolute requirement to mobilize and organize society toward a nonlinear and gender-equal sustainability management.

The municipality of Comondú has a total land area of 12,547.3 square kilometers, which accounts for 17 percent of the total area of BCS; this makes it the second largest municipality in the state and the eighth largest in the nation. The municipality is divided into two regions, the Valley of Santo Domingo and the Central Pacific region. The valley's main activities are agricultural, an area that has boomed since 2000 through the production of legumes and vegetables for the international market; livestock, fisheries, and aquaculture have also flourished recently. Additionally, the magnificent beauty of the region's mountain ranges and seasonal whale-watching activities in coastal towns have expanded nature tourism and created hope for further development.[1] Nonetheless, the benefits of economic growth have been garnered mainly by a small class of landowners, with little spillover to the general population. During the last quarter century, overall employment conditions have been such that from 1990 to 2010, the year of the last census, the population in the region decreased from 74,346 to 70,816. Many people of working age have been drawn to then-booming Los Cabos and to La Paz, the state capital. Two thirds of the population live in the municipal capital, Ciudad Constitución, in the middle of the valley.[2]

To understand more about the recent trends in population decline, we must examine the history of Comondú. The Valley of Santo Domingo was opened to settlers in the 1940s, when the Mexican government launched a colonization program with two ends in mind: "first, to populate this little-inhabited region and thereby forestall perceived annexation attempts by the United States, and second, to respond to the demands for land by farmhands from the center of the Republic—demands that could not be met in their hometowns."[3]

The policy and the drive for colonization began in earnest when Governor Agustín Olachea (1946–52) instituted a series of policies related to

irrigation (the drilling of deep wells), the delivery of agricultural machinery (as well as supplies and seeds), and credit (establishment of credit unions). In a similar fashion, technical personnel, drillers, teachers, and doctors were sent to meet the needs of the region and were key to the creation of seventy-three agricultural colonies for the settlement of people coming to the Valley of Santo Domingo from across the entirety of Mexico. The Green Revolution cemented the economic growth of the region with its modernizing model. Development extended into the Central Pacific region (see map 1) and subsequently brought forth the creation of *ejidos*, the traditional Mexican form of communal property.[4] However, overextraction of water and the misuse of the land brought about the salinization of the water wells that had previously sustained agriculture and cattle-raising, while the increased use of pesticides led to the pollution of the soil.

In the past, a pattern existed where land-use practices resulted in the environmental destruction of agricultural lands. A similar model continues to operate today, where these practices operate under a scheme of increased use of technology in export agriculture. The view of nature as an "input" for the production chain, rather than as an element of the socioecological system, continues to deplete environmental resources. Crucially, these environmental resources are needed for the survival of the people living in the valley as well as the Central Pacific region. In terms of social conditions, the latest United Nations (UN) Human Development Index (HDI) reports that Comondú is in fourth place among the five municipalities extant in BCS. The state itself is fourth in the national ranking of states, which is led by Mexico City with a value of 0.830 (similar to Andorra's), while BCS's HDI value makes the state similar to Bulgaria.[5]

In the context of these statistics and recent Latin American research on human security, the reality is that in Latin America—where few if any of the UN's Millennium Development Goals have been met, and ancestral poverty and increasing inequality prevail—communities are unsustainable in many ways.[6] To increase sustainability in farming communities, we propose that the human security approach needs to be complemented with emerging theoretical schemes and practical, strategic courses of action that may enhance the welfare of the population at large. Concretely, the aim of the research was to look into the possibilities of building sustainable communities through a socioecological approach in which women's empowerment is

a key requirement to mobilize and organize society toward a nonlinear and gender-equal sustainability-management system. In this chapter we present some results of work done through collaborative-action research with a group of women in Ejido 5, a rural community in Comondú.

We bring to our work a deep regard for the different kinds of knowledge about the interactions of groups in relation to nature and the community. We specifically seek to incorporate these diverse knowledges in the construction of new possible courses of sustainable action. By seeking these knowledges, we can begin to understand how the people of Comondú, particularly rural women, view ecological and human processes. To allow for different kinds of knowledge to be recognized, we have elected to use a qualitative methodology following the participatory action research approach proposed in Stephen Kemmis and Robin McTaggert's critical emancipatory model.[7] The lens used is that of Latin American social ecology, a transdisciplinary field of research and practice founded by Eduardo Gudynas, a researcher at the Uruguayan National Research and Innovation Agency as well as a research associate at the Department of Anthropology at the University of California at Davis. Gudynas's research examines the environmental and social impacts of current South American development strategies and looks for alternative paths to sustainability based on the rights of nature. Gudynas is the first Latin American thinker and activist to be appointed Arne Naess Professor of Global Justice and Environment, which recognizes an ongoing commitment to deep ecology.[8] Gudynas has been at the forefront of indigenous peoples' struggles to gain official recognition of their right to their ancestral lands and has been a critic of government policies of dependence on the extraction of mineral wealth from those lands.

## REFLECTIONS ON SUSTAINABILITY

Most people in Comondú face enormous social, economic, political, and environmental challenges, which together have created a multidimensional crisis. We consider the crisis to be the product of a socioecologically unsustainable, growth-dependent economic model that has profoundly shaped our social, production, and power relations, including our way of doing and using science, for over half a millennium. This model—capitalism, now in its neoliberal, financialized manifestation—requires a radical transformation:

to go from what Kenneth Boulding called a "cowboy economy," in which land and all other environmental resources are seen as inexhaustible, to a "spaceship economy," where resources are by definition limited.[9]

Indeed, the current model of capitalism, based on an inexhaustible supply of resources, is in fact pushing the Earth to its limits. Examples of how the planet is fast approaching these limits are numerous. Indeed, in a document presented at the 2012 Rio+20 Conference on behalf of the British charity Oxfam, Kate Raworth decries the lack of follow-through on commitments made twenty years earlier in the original Rio Summit.[10] Referring to the work of Johan Rockström and his colleagues, Raworth points to nine "environmental boundaries" now being broached or threatened: those having to do with climate change, freshwater use, nitrogen and phosphorous cycles, ocean acidification, chemical pollution, atmospheric aerosol loading, ozone depletion, biodiversity loss, and land-use changes.[11] While the dimensions of these global problems are becoming better understood, there is still a lack of adequate and universally agreed-upon indicators, as the Sitglitz Commission stressed several years ago.[12] Underscoring Oxfam's concern with both environmental and social justice, Raworth insists that there is a two-way street between ecological predicaments and social problems, as they tend to reinforce each other.[13] The sufficient provision of food, employment opportunities, clean water, sewage systems, and other resources required to fulfill human needs and rights is not available in many countries, predominantly in the Global South but also in certain areas of the Global North.

Therefore, the ways out of our present unsustainable conditions demand more than the dated discourse of the three pillars that defined the Brundtland Commission report of 1987, which, while it may have been useful in the 1980s, has been overtaken by the debt-driven consumption surge of the early 2000s as well as by the continued profitability of global extractivism.[14] Elmar Altvater has argued that against the increasing pressures to "improve competitiveness" in globalized space (an ever-present feature of the current economic model), corrective measures such as a reduction in fossil fuel consumption can only happen as a result of collective (i.e., social) action.[15]

For Gudynas, the ambiguous positions that the Brundtland Commission report espoused on the relations between growth, development, and nature led over time to a plethora of (differentiated) approaches to

sustainability—weak, strong, social, superstrong, and so forth.[16] In particular, Gudynas stresses that *superstrong sustainability* includes the consideration of social, cultural, aesthetic, religious, and other valuations in addition to economic and ecological matters. Gudynas's superstrong sustainability is based on a biocentric conception of the relationship between humans and nature and a concern for human quality of life based on community empowerment in the management of environmental resources.[17]

Preventing the continued deterioration of ecosystems involves many different dimensions, including maintaining the integrity of biodiversity as well as individual quality of life.[18] Amartya Sen proposes that "development" refers to an increase in the worth of human life rather than the wealth of the nations in which human beings live, as this is just one component of life itself.[19] Consequently, the interdependence between the environment and development needs to include not only environmental conservation and economic "progress" but also a concern for human rights, population, housing, food security, and gender. As Leticia Delgado-Cobas has noted, "the challenge of sustainability is for individuals and institutions to act with concern for the present and the future, sharing equally in the resources on which the survival of human and other species depend."[20] Thus, a new, alternative development model must be built by an active citizenry so as to be able to meet "present and future needs equally among the various cultures."[21]

From the perspective of *superstrong sustainability*, people-based community building becomes participatory and consultative by necessity, and politics have a larger role than the administrative duties typically seen in nation-states. Thus, Armando Páez G. maintains that to be significant, visions of an ecological society must take a political form—politics being seen as a democratic exercise that brings proposals, discussions, and rational explanations and results in face-to-face decisions.[22] Politics, then, must be an agent for transformation.

This requirement calls for understanding and finding solutions to problems related to political participation in building sustainable lives—a very sensitive issue, especially for women and girls. Women are frequently excluded from participation, owing to their low decision-making power in the home, community, labor market, and government. The result is that they are afforded too few chances to improve their

overall situation, which sets the stage for continuing disparities from one generation to the next.[23]

## CONSIDERATIONS ON LATIN AMERICAN SOCIAL ECOLOGY

Latin American social ecology has emerged in recent years as part of Latin America's efforts to engage in new environmental-systems thinking. This approach embraces a set of ethical principles and methodologies from different socioecological visions of sustainability based upon neoclassical economics and the positivist disciplinary stances now prevailing in many parts of the world. The origins of social ecology may be traced to the Chicago school of human ecology of the early part of the twentieth century. This strand of urban sociology saw the city as a laboratory for the (qualitative) study of human nature through naturalistic methods based on ecology and biology.[24] The most prominent framework that grew out of this school is the Burgess model, where the city was seen as an ecological system and urban expansion was understood as the result of the competition for space between early and late settlers, with outcomes depending on economic levels and other social characteristics.[25]

Although this and other schools of human and social ecology have been created and/or proposed,[26] a new, uniquely Global South–inspired social ecology has been developed at the Centro Latino Americano de Ecología Social (CLAES),[27] with Eduardo Gudynas as its main voice.[28] This new model of thought speaks to a broad concept of social ecology, defined as the study of the interactions of human and environmental systems. Per Gudynas, both systems are equally important, and so are their interactions, as is the relationship between social ecology and his conceptualization of sustainability. As Martha Adriana Márquez-Salaices has explained, Latin American social ecology seeks to build sustainability on the basis of new ways of valuing nature and organizing society, founded on autonomy, self-sufficiency, self-defense, and community self-management.[29] The construction of this approach to sustainability through Latin American social ecology depends crucially on horizontal communication, rather than the vertical version that Gudynas finds in conventional approaches to sustainability, as well as community participation.[30] That is to say, sustainability must mean a profound transformation of production and consumption processes as well as the power structures that they are embedded in, through participative management of

natural resources. Deep sustainability "is not restricted to economic or ecological value" but goes beyond them to propose multiple forms of valuation (social, economic, ecological, cultural, biotic, etc.).[31]

Most relevant to the project described in this chapter is how Latin American social ecology discusses "participation." Indeed, this approach differentiates between two types of participation: superficial and deep.[32] Superficial participation is characterized by the unidirectional action of the external agent, who forms a group and proposes a possible joint project, with the group being "part of" the joint work. In marked contrast, deep participation is characterized by the agent "taking part in" the work of the local communities involved in political actions. Gudynas and Graciela Evia have defined deep participation as profound involvement with others in seeking answers to common problems, "not to make the opinions of the few [i.e., the external agent] the view of the majority, but to rediscover majority opinion and question the views of the few."[33] This is done through a process of interactive approximations, whereby both the external agent and the community group modify their initial perceptions and inferences. An example might be the community and external agent working together to rediscover the natural and socially constructed built components of the community's environment and mode of life. In this process of rediscovery, all opinions must be listened to, as all knowledges are valid. Gudynaas and Evia add that "the external agent might think she knows her truth, but must respectfully listen to all truth."[34]

We find it useful to contrast deep participation with the profound failings in the Comondú municipality's development model. Indeed, in contrast to deep participation, the kind of participation promoted by Comondú's government is based on an individualistic rationale that does little to foster coordination among organizations, agencies, and the people themselves to construct a sustainable community. Deep participation would be characterized by the full political and social participation of all members of the community in decision-making processes that rest on socioecological justice—for example, how to improve quality of life by securing a supply of basic foodstuffs while applying ecological principles in local agricultural practices.[35] In our research, a content analysis of news stories found that the government promoted a more superficial participation in political, economic, and social programs.[36] This type of participation occurs because many of these programs are created and managed by the federal government and transferred to the community without real local engagement. We

propose that deep participation could lead to local solutions that advance community members' own welfare programs and create greater capacity for autonomous organization and environmental conservation. Additionally, direct involvement of the community could lead to the development of new socioecological paradigms.

A new paradigm developed directly with local actors would reflect the type of "sustainability" defined above. This conceptualization would cut across all aspects of life, rather than just the pursuit of economic or environmental advantages. Seeing actors as constructors of sustainability in a new socioecological paradigm would place nature as part of a system of socioecological interdependence. In this way, nature would be at the center of the discussion and, as such, would generate new approaches to environmental valuation. Specific to Comondú, new approaches would emphasize the high-entropy character of the agricultural model that grew out of the Green Revolution, appealing to the incommensurability of nature and transgenerational responsibility. This would be of importance to Comondú in terms of achieving a more rational use of water and adopting agricultural practices free of environment-poisoning chemicals, while keeping in mind the needs of our descendants. In keeping with the postulates of Latin American social ecology, our research seeks answers to social questions and to the empowerment of the women's group of UMAFOR 302, as discussed below.

According to Enrique Leff, to be open to superstrong sustainability is a way to a "new dawn"[37] that involves the deconstruction of some of the ideas that formed the basis of an "actually existing modernity,"[38] guided by the ideas of progress and limitless growth. In contrast, a new dawn would work through deep ecology and a continuing dialogue between knowledge and environmental rationality, leading to sustainable communities in a healthy planet. The new social ecology examines the relations between people and local environmental systems from an ethically committed praxis. This means that in social ecology, practitioners will "ask" the people how they "see" the environment, rather than relying on the description of a technician who is removed from the local context.[39]

## STUDY RATIONALE

Many studies have been made, plans drawn up, and research projects financed by institutions, academic and otherwise, within the various cities

and municipalities of BCS. Citing the importance of Comondú as the main agricultural and ranching center of the state and, as such, an important foreign-exchange earner, these studies have sought to shed light on the environmental impact of the economy in the municipality, focusing primarily on soil exhaustion and the loss of water supplies. This is important because agriculture accounts for only 5 percent of the state's gross domestic product but absorbs close to 80 percent of its water.[40] The unbridled quest for private economic gain by a few propertied families has been made evident through research that documents the parallel degradation of ecosystems and resulting public health issues. However, few (if any) studies or programs fully include the social dimension, meaning how the population earns its living, how people work and rest, and what means are at their disposal. Instead, when the social components of environmental degradation are addressed, they focus on general descriptions at the municipal level, often through the use of national or international socioeconomic indicators in order to comply with the letter of federal financing programs. They rarely go beyond the municipal to the community level and seldom (if ever) address the everyday life of small communities. This study seeks to correct this omission.

## THE PRAXIS OF SOCIAL ECOLOGY IN EJIDO 5, COMONDÚ

In a social ecological approach, knowledge can take many forms, and different ways of knowing related to people's interactions with nature may create new paths toward a sustainable future. In this project, we can capture an alternative approach to knowing by engaging in participatory research. The participatory practices that inform this type of research are such that results both come from and go directly back to the people who need them and can best use them.[41] A primary aim of participatory research is to promote the self-organization of marginalized groups—in our case, rural women. In Comondú, the aim is to enable them to make their voices heard in their own communities, and beyond, by making proposals in search of economic avenues that will alleviate the precarious conditions of their lives, demanding accountability as well as support from local and state authorities, and participating in municipal-level commissions. Our own involvement in support of these processes took place at two levels: (a) field work in the sphere of the interacting group, comprising visits, meetings, and interviews, all directed by agendas of discussion in accordance with the interests of the community,

and (b) the work of analyzing findings and disseminating results as well as building relations with institutions.

Our work with the group of women in Ejido 5 is characterized by three basic dimensions: scientific research, action, and advocacy. Following the tenets of the participatory research embedded in social ecology, we follow the requirement that both research and practice be done from an ethical standpoint.[42] We list the stages of the research in table 1 (appendix) and report on the entire research method below. We also include discussion of how we entered into the community and results of the interactive process, relying on the terminology employed in Gudynas and Gudynas and Evia.[43]

## ENTRANCE AND DIAGNOSTIC ANALYSIS OF REALITY OF COMONDÚ

The Association of Forestry Producers of Comondú, a nongovernmental forest management unit (UMAFOR, for its Spanish acronym) that aims to achieve sustainability through orderly planning of forest activities and efficient management of forest resources, was selected as our case study. UMAFOR 302, the designation of this specific forest management unit, is composed of 857 farmers and their families and covers an area of more than 2.34 million hectares (see map 2, appendix). The main factors affecting the population of this UMAFOR are (a) the overuse of timber resources as wood for charcoal production, (b) overgrazing by land-intensive, nomadic livestock, and (c) the absence of planning and technical assistance. These conditions lead to low incomes, little economic diversity, and the emigration of the younger population to big cities or to the United States, seeking a better quality of life.

The first step in our work was to understand the perceptions held by local forestry producers and the overall population about environmental problems in the area. Interviews, guided by a standard fifty-two-item questionnaire were conducted with fifty-two members of six of the ten communities located in the UMAFOR (see table 2, appendix). A large proportion of respondents were involved in religious groups, but no responses were recorded for involvement in political activity, likely due to the negative connotations that the word "political" carries.

When asked which aspects of the environment came to their mind first, respondents recalled beautiful landscapes and pristine forests, followed by nature protection and conservation. Environmental problems were of

concern for over 66 percent of respondents. Almost 40 percent said that health care was the foremost issue in their minds, again followed by environmental protection. The reduction of poverty levels was an important issue for 25 percent of interviewees; interestingly, this is roughly the proportion that does not own their home. The lack of maintenance and proper illumination of green areas was also seen as an important problem. Additionally, 73 percent of respondents thought that individual actions, in general, did not have important consequences for the environment; fewer than 25 percent thought that individual actions did have consequences. However, a very high proportion of those interviewed saw human action as being responsible for environmental damage, while 25 percent thought not. Further, more than 50 percent of the answers indicated that people saw themselves as responsible for environmental harm, and only 2 percent thought they were not. Still, in acting for the improvement of the environment, over 80 percent reported that they would not wait to see what others would do; thus, perhaps tellingly, only 12 percent thought that only collective actions would be useful.

Almost 66 percent believed that the condition of the environment had remained constant in recent years; over 25 percent said it had improved, and only 10 percent saw it as worse. The solutions to practices harming the environment were seen to lie in stricter laws, environmental education programs directed at the entire population, and mandatory payments for environmental costs, in that order. Finally, the groups provided suggestions to the Comondú municipality for improving environmental conditions, ranging from increasing the presence and attention of the authorities in the communities, to working on the problem of waste collection and management, to enforcement of existing laws.

These preliminary, questionnaire-guided interviews showed the rather complex and, at times, contradictory perception of forestry producers in relation to the municipality's environmental problems. More than half of respondents had a general concern for environmental problems. Although respondents reported that they would not personally wait to protect the environment, the solutions they suggested to protect the environment placed responsibility on policy and education—actions directed by the government. Further, respondents showed contradictory perceptions regarding the assignment of responsibility for environmental degradation and whether such degradation had occurred in the first place.

To gather additional information and decide on the location of our participatory intervention, we conducted in-depth interviews with the association's board and community representatives. From the information provided in meetings with board members such as the president of the Comisión Ejidal Santo Domingo (the commissariat of ejido land tenants) and the secretary and the treasurer of the association, our initial choice was Ejido Santo Domingo since it is the largest in size and population. However, owing to reported negative experiences from a recent community land management project funded by a La Paz nongovernmental organization (NGO) as well as the construction of a new greenhouse financed by the National Forestry Commission (which offered temporary employment to members of the community, mostly males), no interest was shown in our research project. We then approached Ejido 5, where the women and families of the local registered forestry producers agreed to participate. They had no paying jobs, had free time in which to participate, and were eager to explore opportunities to improve their low-income status. Sixteen women constituted our participation group (see table 3, appendix).

We held three discussion sessions. These discussions focused on (1) a diagnostic analysis of the kinds of knowledges that the women participants had about the interactions of the community with nature, (2) their ways of organizing the assignment of different tasks, and (3) their feelings about the valuation of nature.[44] These discussions were guided by the following set of questions: (1) "What kinds of production projects has the community been involved in?"; (2) "What were their positive aspects?"; and (3) "What were their negative aspects?"[45] From these discussions, the women participants shared the following information:

1. Participants had experience with the development of sustainable projects such as greenhouses, planting cacti, backyard gardens, and animal husbandry. The community had good relations with the Agricultural Industrial Unit for Rural Women, a rural development initiative of the Mexican federal government that seeks to improve living conditions in poor rural areas. However, that organization does not allow new members. Therefore, participants proposed the creation of a more inclusive project to strengthen ties within community and with the government.

2. The main issues participants faced were financial and/or market-related in nature. For example, participants shared that projects ran out of capital due to lack of formal marketing strategies that would ensure the sale of their products. This central issue led many participants to converge on a main practical issue, the development of organizational capabilities, as well as addressing challenges to bring projects to fruition. Crucially, as Latin American social ecology is not only about the environment but also about the attitudes, actions, practices, and policies required for a more sustainable future, the answer to questions of organizational development were necessarily considered from the perspective of the actors—the women—who participated in this research.

3. Respondents were aware of the existence of a recent biometric study done by a private consulting firm specializing in forestry studies (and paid for by the Regional Association of Forestry Producers). Participants expressed a need to learn the study's results, as they feel that their current knowledge of local flora and fauna is inadequate for them to become leaders in sustainable management.

4. Considering existing federal guidelines for the submission of proposals for the constitution of Community Forestry Enterprises (Empresas Forestales Comunitarias, or EMCs), the group of participants identified potential new projects. In the group's opinion, these projects had the greatest potential to (1) serve as instruments for the women's appropriation of the management of their forestry resources, (2) build social capital, and (3) help them organize to promote the direct management of forest resources and environmental services by the community.[46] In undertaking new production projects that would meet the goals listed above, the participants sought support from the Regional Association of Forestry Producers of Comondú as well as directly from the appropriate government agencies. Support would assist in the creation of production associations and the appointment of a resource manager. Replies have so far been positive, indicating an understanding outside the community (as well as inside) of the need to promote the role of community members, especially

women, as forest research managers. In doing so, there is an implied understanding of the need for alternative, gender-equal employment opportunities in this geographic area. Further, positive replies recognize the importance of developing the organizational potential of women. In this case, establishing sustainable production projects would allow women to have opportunities and power beyond their traditional roles. Prior to women taking power as resource managers, women's roles were limited to acting as housewives, performing household chores, and raising children or working as laborers in low-status and poorly paid jobs. Most women in the group had very low formal education levels and depended entirely on their spouse's income.

The answers provided by women participants during our research as well as the replies of government agencies to the women's requests have created a new, jointly held perspective in which the work and experience of women is held to be necessary to (1) allow solutions to socioecological problems to emerge from the community itself, (2) break away from the inertias of both welfarism and rampant individualism, (3) bolster the sense of community, and (4) build women's autonomies in multiple dimensions: economic, political, and personal.[47] Moreover, as David Barkin and Daniel Tagle Zamora affirmed, there are signs that creation of enterprises by women's groups such as EMCs requires and fosters further realization of women's talents. Indeed, participation in an EMC renders women well positioned to further cultivate five fundamental principles of development: autonomy, solidarity, self-sufficiency, economic diversification, and sustainable management of regional resources.[48] Here, we emphasize the role of women, as equity is a central tenet of sustainability.

## THE INTERACTIVE PROCESS

Following the three discussion sessions with the group of women, we moved to the second phase of our research. The second phase, the interactive process, is the central element of the praxis of the new social ecology. This interactive phase aims to foster empowerment in the participants. In our case study, data focused on the interactive processes in which the women's group of Ejido 5 was engaged in the production of knowledges. Women produced

knowledge through planning, action, observation, and reflection. During the following research-initiated activities, we collected data through workshops, training, meetings, and interviews carried out during field trips. Data were collected as field notes, photographs, and voice and video recordings. Research occurred, and thus women were engaged, in the following settings: a community bank program, specialized training, meetings, a field trip, a focus group, and interviews. Findings from theoretically illuminating settings are described below:

1. *Community Banks Program.* Through the formation of a collective savings program, the members of Ejido 5 women's group built opportunity, strengthened social networks, gained access to financial services, and assured a more financially secure future for themselves and their families.[49] The program could serve as the basis for inclusive participation and as a platform for the self-management of production projects. We would especially look forward to projects oriented toward the social economy and responsible consumption. Though the bank strategy came from outside the community, the program was adapted to meet community needs by the women's group. As a reflection of their needs, the program is becoming part of the dynamics of the community. In this way, we believe that it can become part of the foundation for community participation.

2. *Field Trip.* The Association of Forestry Producers of Comondú sponsored travel to the town of Jiménez, Chihuahua, for a meeting with oregano producers from the Association of Forestry Producers of Chihuahua. Two members of the women's group took part in the trip with the goal of gathering technical information on oregano production, the use of wild oregano, and the extraction of essential oils. Participants believed the activity would bring the community knowledges derived from the experiences of small forestry producers in Chihuahua. The oregano producers were of interest as they had applied scientific practices to the management of environmental resources. This field trip included meetings, workshops, informal talks, and exchanges of experiences between visitors and hosts.[50] After the field trip, we utilized similar intra- and intergroup exchanges of information and knowledge as part of the deep-participation processes for our own research with the women's group.

3. *Training.* Participants regularly attended workshops, conferences, and talks on climate change through the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation.[51] as well as conferences and workshops on conservation practices and reforestation, production, forestry, and environmental regulations offered by the Gender Perspective and Cultural Mission of the National Forestry Commission of Mexico.[52]

4. *Focus Group.* The Ejido 5 women's group participated in a focus group in September 2015 to discuss their concerns about their environment. The focus group was used to create a situation where all knowledges were equally valid and answers were sought by listening to the knowledge of others. Next, in the results section, we present the focus group as an important element in the process of creating the women's unified understanding of the environmental, social, and natural components that must be considered for the socioecological and economic sustainability of their region.

## RESULTS

From phase two's interactive process, the women of Ejido 5 created an action plan:

1. The renovation of the existing women's meeting house in the ejido.
2. A commitment by the group to weekly meeting attendance. Regular attendance would ensure completion of the following: cleanliness of the meeting house, appointment of a board of directors, drafting the group's rules and regulations, following-up on project proposals, and organizing meetings with the ejido commission. Above all, weekly meetings were a strategy for holding the group together.[53]
3. The formation of a women's assembly for the ejido.
4. The foundation of a community forestry enterprise.
5. A system for reporting on the group's production projects.

The group also decided to pursue financial, technical, and material resources from groups in positions of power. This included obtaining financing from the chairperson of the ejido council, the state, and NGOs for the renovation of the women's meeting house as well as securing a visit of a cultural mission from the Secretariat of Public Education (Secretaría de Educación Pública). Finally, the Association of Forestry Producers of Comondú made a commitment to provide seeds and training for oregano production, a business plan, and marketing.

We followed the action plan over the next year and a half (September 2015 to March 2017). During this time, we observed the cultivation of concrete actions/products:

1. The creation of the cooperative Sociedad Cooperativa Especias y Derivados del Valle S.C. de R.L. de C.V., which has allowed the women to obtain credit for to finance the development of their Community Forest Company.

2. The foundation of the El Porvenir community bank, which is a source of financing for the EFC.

3. The establishment of a cultural mission to preserve the ejido's environment, an initiative of the women's group. We believe the cultural mission is of great intrinsic value for the community.

4. The field trip to facilitate knowledge exchange with producers in Chihuahua. This activity helped the women's group obtain technical information on oregano production and develop ways to use wild oregano.

5. Upon return from the Chihuahua field trip, the ejido's board of directors refused to grant the women permission to harvest oregano in the patch of forest they had initially chosen. The problem was that only one of the women held ejido land herself; all others were wives of ejido landholders. The men had denied the women permission to use "their" lands (although ejido land is communal, not individual, property). However, a private donor enabled the women to gain access to land elsewhere in the forest. This was one of the worst observed instances of gender-based discrimination against the women. In spite of difficulties, the extraction of essential oils

from wild oregano is now the basis of their sustainable Community Forest Company.

6. The women's group received specialized training by experts from Ciudad Constitución and Mexico City. In spite of this, the need remains for a long-term formal training program with an emphasis on environmental education.

7. A business plan was developed by the group through a long-term cooperation agreement with the Ciudad Constitución Institute of Technology (Instituto Tecnológico Superior de Ciudad Constitución). The plan now serves as the guide for the operations of the EFC.[54]

## FINAL COMMENTS

During the first phase of the field work, we discovered that environmental problems were related primarily to health/pollution issues. However, these issues were considered unrelated to deforestation and overexploitation of timber resources. Interestingly, these are problems that we (and other researchers) see as very important in the study area. In the first phase of the field work, we were able to show that respondents do not assume personal responsibility for environmental damage. Further, they consider their actions as isolated from those of others, although they acknowledge that human activity is making irreversible damage to the environment. Finally, respondents propose corrective measures for environmental problems, posing them as suggestions for the authorities to carry out. Therefore, while researchers link environmental degradation to both human actions and negative impacts for human health, the mitigation of environmental harm does not appear to be linked by respondents to health hazards, nor do they see themselves as responsible for mitigation strategies.

During the first phase of the research, we observed diverse attitudes with respect to the role of the individual and the government. On one hand, participants did not trust outside organizations and government agencies; on the other hand, they demanded assistance from those organizations and agencies. We see this contradiction as a result of the assistance-based model that does not empower people to create their own production projects.

Instead, people are made to rely on the government and other "outsiders." Therefore, we believe there is need to develop individual and collective potentials and capacities for improving productivity and overcoming dependence on aid, especially in the case of women.

Building on the idea of empowerment initiatives, we consider the process of structuring a community bank that occurred during the second phase of research. Perhaps seen by some as a sterile business transaction, we imbued the act of bank creation with meaning: the women were able to define themselves. Through the act of creating the bank, they became a group; they took on responsibilities and recognized the strength that comes from working in unity. The women claimed power outside the home and, further, were able to translate power into the funds that they put toward production products.

The women clearly enumerated the necessary components of a community that would build a better quality of life: education, clean environment, social justice, and gender equality. Now these elements are integrated into their regular meeting agendas and are realized through the consolidation of the group as a community forestry enterprise. This organization contributes to the socioeconomic development of the ejidos and communities as well as to the conservation of forest resources.

We believe it is important to recognize that the work of the women's group has been limited, especially because the women feel they were victims of abuse of authority and political corruption. From these limitations, the women saw a need to create new participatory mechanisms. The mechanisms the women envisioned would empower them as well as lead to sustainability. Empowerment and sustainability are co-occurring for these women as well as in theory, especially considering the five fundamental principles that undergird this research: autonomy, solidarity, self-sufficiency, productive diversification, and sustainable management of regional resources.[55] We found evidence of the co-occurrence of empowerment and sustainability measured as the number of activities that they were able to engage in over the year and a half of our research. Even the denial of permission to collect wild oregano in certain parts of the nearby forest by its male keepers did not deter them: they simply went elsewhere and carried on.

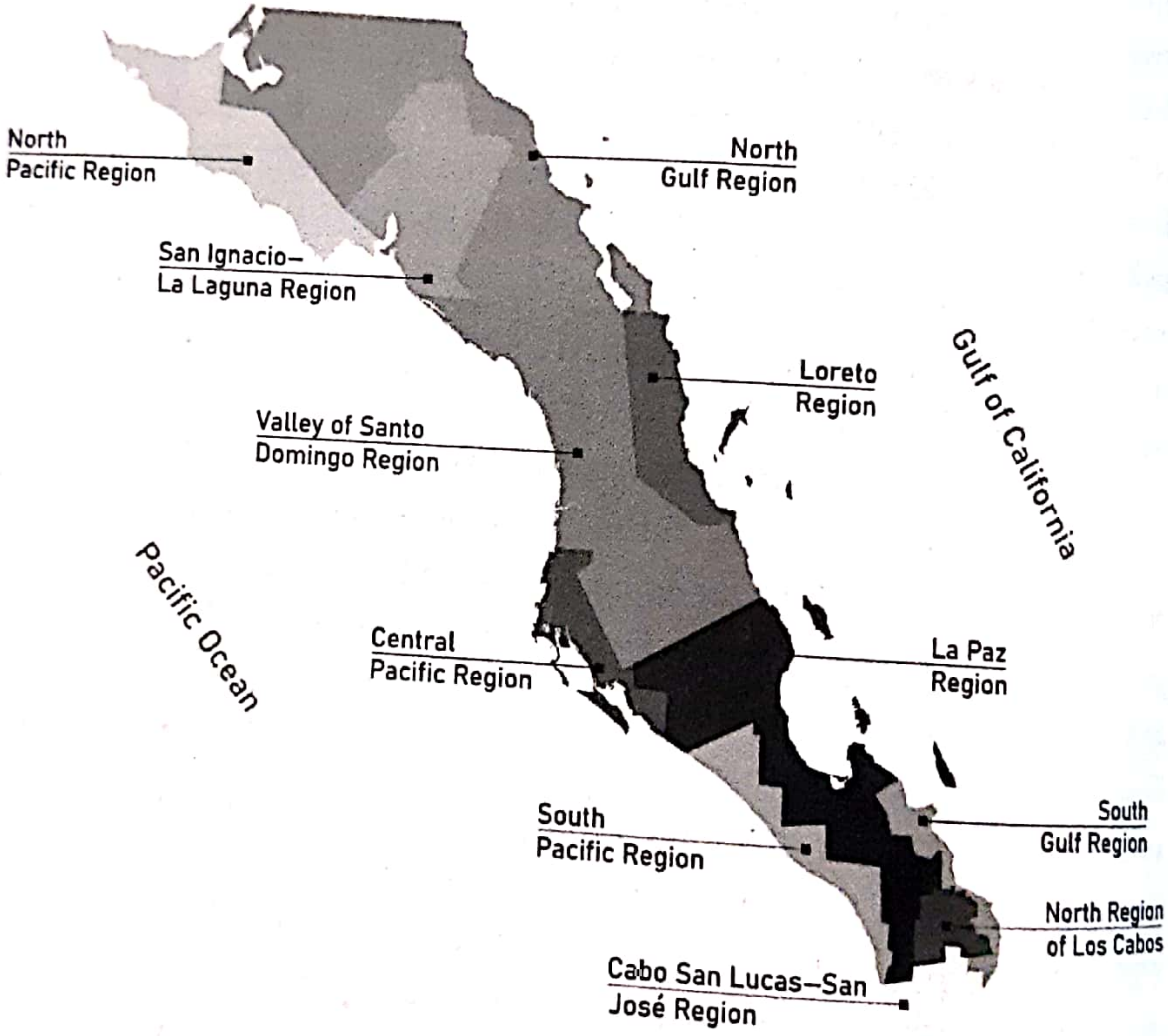
Nonetheless, greater development of relationships with receptive government agencies, NGOs, and universities is needed for influencing public debate in favor of future projects. Further, such relationships are needed for

shaping shared consciousness that put community's values and ideologies directly into actions that increase empowerment, sustainability, and rational use of environmental resources. Building on rationality serves, in turn, to break the inertia toward the assistance-based model. In this way, the community is led by women on its path toward greater self-sufficiency. Indeed, without an assistance-based model and disintegrating individualism, a sense of community emerges. As Victor Toledo asserts, "if the depletion of natural resources is the result of the lack of organization in society, loss of social solidarity, the triumph of individualistic values over community values, the weakening of the will that resists the predatory forces of the economy, then environmental policy should be directed towards the reorganization of society, as organization is a source of power."[56]

It is therefore necessary to strengthen processes that build community relations in Comondú and to outline alternative actions to mobilize and organize society toward gender-equal, sustainability management. Our empirical findings demonstrate that for the population of the UMAFOR 302, and especially for the women in our group, the Millennium Development Goals are far from being achieved. The women remain underschooled, poor, and dependent and, as such, not socially or environmentally empowered. On the other hand, the participatory action process in which the women were engaged through our research yielded important results. Our results, in agreement with the work of Natalia Ariza, suggest the need to complement human security concerns with the new Latin American social ecology approach.[57] Indeed, by linking Latin American social ecology to human security, we are able to engage, especially with women, who largely remain off the radar of most national or international aid agencies. Locally, these same groups often—as was true in our case—lack adequate job opportunities or even possibilities of futures different from the generations that preceded them. Their roles as housewives and homemakers, in a strongly patriarchal setting, combined synergistically with high poverty levels. Still, our research showed that though a community faces adverse circumstances, women's engagement and sharing of their knowledge-fostered empowerment and sustainable initiatives. Our results show the viability of combining the wider aims and procedures of the human security approach with the more local, almost intimate methodologies propounded by Latin American social ecology.

# APPENDIX

## MAP 1: Regions in Baja California Sur



MAP 2: Location of UMAFOR 302 Comondú, B.C.S.


TABLE 1. Phases in the praxis of the new social ecology

| | |
|---|---|
| First phase | Insertion analysis and diagnosis of the reality:<br>the interacting group is selected; its problems and needs are identified and explored. |
| Second phase | The interactive process:<br>in which the basic tools are research, advocacy and action, and deep involvement made through participatory action research. |
| Third phase | Dissemination training:<br>intended to share the information generated in the practice with the interacting group for purposes of discussion whether in the community or in other areas. |

TABLE 2. Responses to questionnaire in Comondú communities

| | |
|---|---|
| **When speaking of the environment, which of the following is the first thing that comes to mind?** | |
| 1 Beautiful landscapes | 41% |
| 2 Nature protection | 35% |
| 3 Pollution | 18% |
| 4 Quality of life | 4% |
| 5 Natural disasters | 2% |
| **How much do environmental issues concern you?** | |
| 1 A lot | 77% |
| 2 Some | 21% |
| 3 A little | 2% |
| **How would you run environmental issues in Comondú communities?** | |
| 1 Improving health | 37% |
| 2 The protection and conservation of the environment | 24% |
| 3 Reduction of poverty | 22% |
| 4 Education | 10% |
| 5 Peaceful coexistence among citizens | 7% |
| **Main environmental problems in the Comondú community:** | |
| 1 Sanitation/refuse management | 44% |
| 2 Cleaning up green areas and parks (they mentioned street lighting) | 30% |
| 3 Air pollution | 26% |
| **Is individual action important for the solution of environmental problems?** | |
| 1 Believe their individual actions have no important consequences for the environment | 73% |
| 2 Believe their individual actions have important consequences for the environment | 25% |
| 3 Did not answer | 2% |
| **Impact of human activity on the environment:** | |
| 1 Agree that human activity can lead to irreversible damage to the environment | 73% |
| 2 Agree in that environmental degradation can be stopped by changing our way of life | 23% |
| 3 Agree that that human activity is usually in harmony with the environment | 4% |
| **Involvement in groups:** | |
| 1 Religious group | 45% |
| 2 Social group | 28% |
| 3 Business group | 22% |
| 4 School | 4% |
| **Personal actions in relation to the environment:** | |
| 1 Try to act without caring what others do | 81% |
| 2 Try to act but believe that it only works if others also act | 12% |
| 3 Do not try because others do not | 4% |
| 4 Do not know what to do or do not care about the environment | 3% |
| **Changes in environmental conditions in the municipality:** | |
| 1 Believe that the environmental situation in the city remains the same as in recent years | 62% |
| 2 Believe it has improved | 28% |
| 3 Thinks it is worse | 10% |
| **Most effective for solving environmental problems, in order of importance:** | |
| 1 Stricter laws | 25% |
| 2 Environmental education programs directed at the entire population | 23% |
| 3 Make citizens pay the environmental costs | 19% |
| 4 Fines for causing damage | 15% |
| 5 Better application of existing law | 12% |
| 6 Does not answer | 4% |
| 7 None of them | 2% |
| **Personal responsibility for the environmental quality of their community:** | |
| 1 Believe they are responsible for the environmental quality of the town | 54% |
| 2 Consider themselves somewhat responsible | 27% |
| 3 Think they are a little responsible | 17% |
| 4 Do not regard themselves as responsible | 2% |

TABLE 3. Characteristics of women's group

| | | |
|---|---|---|
| **Age** | | |
| Youngest | | 24 |
| Oldest | | 65 |
| **Education** | | |
| No formal education | 4 | 24% |
| Have completed some or all secondary education | 8 | 47% |
| Have completed some or all higher secondary education | 5 | 29% |
| **Housing Situation** | | |
| Own house | 14 | 82% |
| Live in collective quarters | 3 | 18% |
| **Occupation** | | |
| Laborer | 1 | 6% |
| Homemaker | 16 | 94% |

NOTES

1. Secretaría de Promoción y Desarrollo Económico, *Datos básicos.*

2. Gobierno del Estado de Baja California Sur, *Información estratégica.* Comondú registers over fifteen hundred towns, of which only three (Ciudad Constitución, Ciudad Insurgentes, and Puerto San Carlos) have over twenty-five hundred people, the minimum Mexican standard for an urban area. In this sense, Comondú is a rural municipality (*municipio*) that has a population density of about five persons per square kilometer. However, 88 percent of the population lives in those three towns (Márquez Salaices, *Análisis crítico,* 3).

3. Urciaga García, "La agricultura."

4. The Green Revolution was a child of the Mexico Agricultural Program set up in Mexico in 1941 under the supervision of Norman Borlaug (later a Nobel Prize winner) and with financing from the Rockefeller Foundation. By the 1960s, the program was credited with very important increases in agricultural production through the use of hybridized seeds and "lavish doses of fertilizers, pesticides, and irrigation" (Philpott, "Book Review"). Perversely, it also led to a decrease in food crops as famers switched to production for export, as remains the case in Mexico and elsewhere.

5. UNDP-Mexico, *El índice.*

6. Ariza, "La aplicabilidad"; Aya, "Seguridad humana;" Guiñazu, "Ciudadanía;" Morillas Bassedas, "Génesis y evolución."

7. Masters, "History."

8. For a concise view of the differences between deep ecology and social ecology, see Bookchin, *Social Ecology.*

9. Boulding, *Economics.*

10. Oxfam states that its purpose is "to help create lasting solutions to the injustice of poverty. We are part of a global movement for change, empowering people to create a future

that is secure, just, and free from poverty. We challenge the structural causes of the injustice of poverty, and work with allies and partners locally and globally." Oxfam International, "Our Purpose"; Raworth, "Safe and Just Space."

11. Rockström et al., "Planetary Boundaries."

12. Stiglitz, Sen, and Fitoussi, *Mis-measuring.*

13. Raworth, "Safe and Just Space."

14. Brundtland, "Report."

15. Altvater, "¿Existe un Marxismo ecológico?"

16. Brundtland, "Report"; Gudynas, "Ambiente."

17. Márquez Salaices, *Análisis crítico*, 25–26, based on Gudynas, "Ambiente," 14. The main features of these and other approaches to sustainability are discussed in Marais, *Annual Report.* The reader will note that Gudynas's deep sustainability differs from that of Arne Naess, as the former includes, and the latter excludes, a strong commitment to social justice. We address Gudynas's social ecology in the next section of this chapter.

18. Gudynas, "Ambiente."

19. UNDP, *Orígenes del enfoque.*

20. Delgado-Cobas, "La huella ecológica," 459.

21. Delgado-Cobas, 459 (emphasis ours).

22. Páez G., "Del desarrollo."

23. Marphatia, *Creating an Enabling Environment.*

24. Lutters and Ackerman, *Introduction;* Harding and Blokland, *Urban Theory.*

25. Harding and Blokland, *Urban Theory.*

26. Cf. Bookchin, *Social Ecology.*

27. CLAES is an independent nongovernmental organization dedicated to the research, action, and promotion of social ecology. Founded in 1989, it is headquartered in Montevideo, Uruguay.

28. Gudynas was born in Montevideo, Uruguay, in 1960. He has published several articles in his areas of expertise in various magazines and books. His monograph *Ethics, Environment and Development in Latin America* is often cited as a main source of the new social ecology.

29. Márquez Salaices, *Análisis crítico.*

30. Gudynas, "Ambiente."

31. Gudynas, "Desarrollo," 80.

32. Gudynas and Evia, *Ecología social.*

33. Gudynas and Evia, 184 (our translation).

34. Gudynas and Evia, 184. The case study that is the centerpiece of this chapter is an example of this.

35. Adame and Rendón, "Hacia una cultura de la sustentabilidad."

36. The analysis included 820 issues of the newspaper *El Sudcaliforniano* published from January 2011 to December 2014, dates available in print at the time of the study and that largely coincide with the period of the municipal and state administration (2011–15). A total of 6,070 notes in the newspaper's Comondú section were analyzed. *El Sudcaliforniano* is the newspaper with the largest circulation in the state.

37. Leff, *Discursos sustentables.*

38. Echeverría, *Las ilusiones.*
39. Gudynas and Evia, *Ecología social.*
40. Ángeles, Gámez, and Bórquez, "Neoliberalización"; State Energy Program 2011–, cited in Dirección de Energía y Telecomunicaciones, *Programa estatal*; State Program Comprehensive Prevention and Waste Management for the State of Baja California cited in Gobierno del Estado de Baja California Sur, *Programa estatal*; Development ms in the Oasis of Los Comondú, Baja California Sur, Mexico, State Climate Action in B.C.S. Water Resources, cited in Ivanova and Eritrea, *Baja California Sur*; Recovery Aquifer Santo Domingo, cited in Ivanova and Wurl, "Recuperación del acuífero".
41. Rabinowitz, "Section 2."
42. Gudynas and Evia, *Ecología social.*
43. Gudynas, "Ambiente;" Gudynas and Evia, *Ecología social.*
44. Márquez Salaices, *Análisis srítico*, 71.
45. Márquez Salaices, 137.
46. Márquez Salaices, 73.
47. Faria, Moreno, and Nobre, *Las mujeres.*
48. Barkin and Zamora, "La significación."
49. The program is based on a methodological guide provided by the Philanthro- Foundation, a nongovernmental organization from Boulder, Colorado, that works in mmunities in the Mayan community of Chajul, Guatemala, and in Baja California Sur.
50. Márquez Salaices *Análisis Crítico*, 73.
51. In Mexico, it should be understood as a set of strategies that simultaneously pro- mitigation and adaptation through an integrated land management that promotes w-carbon "sustainable rural development" and therefore points to a convergence between nmental and development agenda.
52. Here, in the training section, environmental regulations pertain to the prevention reduction of the incidence of forest pests and diseases that have economic, ecological, social effects on the country. The Gender Perspective and Cultural Mission of the Na- Forestry Commission of Mexico is an educational project serving rural populations ng in poverty with that seeks to promote the integral development of the community ough job training, the teaching of literacy, basic education, recreation, and culture.
53. Márquez Salaices, *Análisis crítico*, 79.
54. Márquez Salaices, 89–90.
55. Barkin and Zamora, "La significación."
56. Toledo, "La sociedad sustentable."
57. Ariza, "La aplicabilidad."

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