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CON CALDIDAD --“Quality Sustainable Communities“

Los dias 6, 7, 8 de Diciembre 2006

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## Marshall Plan for Mexico

From the Editor

Stanley R. Ingman

Post World War II, the Marshall Plan helped Germany, our enemy, and Europe recovered. Why? The plan reduced chance of another war, reduced uncertainty and chaos, produced a good market for our goods, and benefited our own self-interest. Europe is slowly expanding east to bring in more nations into the European Union, to equalize the standard of living in the region, and to reduce immigration of workers to the west. The Appalachia Regional Commission was implemented to improve the economic well-being of the Appalachia Region and to reduce poverty and migration from this region. Why is the USA so slow to understand how to reduce the number of immigrants from Mexico coming north? Government colleagues tell me that the old elite oil men are still mad at Mexico for nationalizing their oil property, so government policy is still reluctant to help Mexico too much. Others argue that the elites of Mexico like Mexican life to remain as it is, since for them, their daily life of privilege is just fine. When I meet some upper class individuals in Mexico, they may tell me that the real problem is that the lower class citizens are just lazy or have no initiative. Or the best Mexicans migrate north.

One-half of Mexico's population is in or near poverty; 50 or more million people are ready to move north for a better life. Who is happy with the current status quo of migration north and massive poverty in Mexico? Are the Mexican elite who control 80% of the wealth through massive subsidies and monopolies happy for the USA to absorb their poor and see some \$25 billion (2006) in remittances from Mexican workers in the States return to support their businesses? Some enterprises are happy to have cheap labor: construction or agriculture to name just two. The recent political struggle for

power in Mexico and the immigration debate in the USA may mean that the status quo may be breaking apart, however.

Felipe Calderon, the new President of Mexico, may be forced to move toward adopting the poverty reduction policies of the major political party that he defeated by less than 1%, according to some political pundits. The USA's policies may shift toward nation building in some regions in Mexico, as opposed to Iraq as the war grinds down.

However, many of the USA's current policies related to Mexico seem to be designed to increase poverty there. Most observers see the flood of American corn into Mexico as killing local corn farmers in Mexico. In 2007, the Secretary of Agriculture of Zacatecas predicted that bean imports from USA will slowly kill local bean production in Mexico. The hot pepper market is being undercut by imports from China.

What are some humble proposals to undercut these trends? States like Zacatecas want to see fewer citizens go north. (Currently, roughly some 1.5 million have left to go north and 1.5 million remain in Zacatecas). It is hard to see any magic bullets to stem the negative impacts of free trade policies, globalization and the further condensation of wealth in Mexico or the USA. Giving up does not seem to be a good option.

#### Local Production for Local Consumption and Selective Export

Israel's creation may be a model to review. Leaving aside the injustices done to the local Palestinians, the flowering of this desert country is remarkable and may provide some insights. Israel had few water resources, few natural plants, few energy resources and little experience with agriculture. Of course, their strong will to be successful and high levels of education are two major assets fostering this achievement.

Israel has developed from a society facing hunger into a major exporter of quality food products to Europe. Sustainable agriculture, which uses every drop of water, is presently one key policy decision. Development of technology and knowledge were also important. Farmers in Israel are currently mostly graduate-level trained professionals.



Israel did not have a “culture” of high or low tech farming in their history; rather, it had to be developed.

I have the sense sometimes in Mexico that many Mexican students have a negative view of ranching and farming. Raanan Katzir, our sustainable agriculture expert and colleague from Israel, sees as crucial some form of an agricultural extension service to work with vocational students and existing farmers. A Research Development Unit in various universities is also key. As Israel has done, Mexico will need to shift to more food crop production and move away from growing just cash crops.

#### Local Energy Production for Local Use

New energy technologies may be an important step toward survival under this massive assault by the corporate state. Decentralization of power generation may be a practical option. Wind power, solar power, and bio-fuels may be a way to reduce dependency on external forces to become more competitive while creating more local employment. Bio-diesel plants in medium-sized towns and/or small villages near bigger cities might be one option. Recovery of methane from local waste dumps to generate electricity and operate bio-diesel plants is another option. Ethanol from sugar cane from southern Jalisco or Vera Cruz may be another. As Oklahoma and Texas are rapidly developing wind resources, so can Zacatecas begin to experiment with wind power. As the various nations rush toward solar, ever cheaper options for solar production in sunny Zacatecas and Jalisco will become more viable. However, Mexico cannot wait for some ultimate perfect technology if it wants to compete in the global marketplace. In addition, local production allows for the local area to protect itself from global market forces. The decline of the productivity of Mexican oil fields may reinforce the move toward alternative energy production.

Sustainability, of course, has two functions: poverty reduction as well as ecological preservation. Why is higher education in Canada, and to a lesser degree in USA, moving toward sustainable development as the organizing principle for the “educational enterprise?” The global warming threat and the fact that two thirds of the global

population live in poverty seem to be forcing many academics and policy makers to question simple minded models of human or societal development.

Our recent 4<sup>th</sup> conference on “Future Without Poverty – Quality Sustainable Communities” in Zacatecas illustrates some baby steps toward the sustainability agenda. In the section on abstracts in this volume, you will locate the presentations on such topics as sustainable building materials and approaches, sustainable agriculture, bio-fuels, questions about present consumption patterns, and pollution controls (pesticides and flower production in Toluca).

#### Actions to Move Sustainability Forward

Our initial paper by Professor Diana Oretago in La Barca, State of Jalisco lays out the comprehensive manifesto for system transformation and provides an illustration of how a small university can meet the sustainable action and education challenges our planet faces. Education of university students as well as the general population on what sustainability means must be part of the strategy. Her participation in the media, especially her work on local radio, provides a model for Mazamitla, Guadalajara and Zacatecas. Her second paper on organizing a recycling program on campus provides a road map for UNT and all campuses to correlate activities with philosophy, theory and rhetoric.

Bill Forbes and his colleagues provide three examples on how nature tourism can create enterprise while decreasing the ecological footprint. Illustrations are provided from the US/Mexico border region, east Texas and rural Oregon. Nature tourism in time may need to become the definition for all tourism. The footprint for human activity, that is, or for leisure activities, needs to be reduced. Consumption of resources must be reduced if ecology and/or enterprise can continue. Leisure activities that do not feed the body and soul cannot absorb resources in wasteful ways. If more sustainable alternative fuels for air travel are developed as now discussed, then more sustainable car and bus travel to experience tourism are surely in the model for the future.

One final paper by Gina Caniano focuses upon the use of ecology to treat or care for dementia patients or residents. This illustrates dramatically the importance of how we build the spaces we live in and interact with. As populations age around the world and longevity increases, an increase in dementia will be one more challenge we all face. Our humanity will be tested. Can we provide settings for our elders with mental disabilities that preserve their human dignity? If we can do this for first world dementia patients, can we also do it for the two thirds of the global population in poverty? Are the two issues some how linked?



## De cómo contribuir desde la trinchera universitaria a la conformación de una cultura para la sustentabilidad de la Región Ciénega<sup>1</sup>

Diana Ortega Villaseñor <sup>2</sup>

### *Preámbulo*

El Centro Universitario de la Ciénega (CUCiénega), es uno de los siete centros regionales que, junto con los centros temáticos asentados en la capital de Jalisco, integran la Red Estatal de la Universidad de Guadalajara. El CUCiénega, cuenta con tres sedes: Ocotlán, La Barca y Atotonilco. La primera es la más importante por ser asiento de las autoridades de este centro, por contar con las mejores instalaciones, ofrecer el mayor número de carreras y albergar a 5,000 estudiantes aproximadamente. La Sede La Barca, localizada a 7 km del poblado del mismo nombre, está emplazada entre sembrados de cereales y una huerta de guayabos. Actualmente, asisten 600 estudiantes provenientes de localidades ubicadas dentro de un radio de 35 kilómetros. En la Sede Atotonilco, están inscritos en números redondos, igual número de alumnos que en la Sede La Barca.

A fines de 2000 el Consejo General Universitario aprueba el establecimiento del Centro de Estudios para el Desarrollo Sustentable (CEDES) en el CUCiénega, y éste entra en funciones a principios de 2001. Los investigadores que lo integramos provenimos de lugares distintos, tenemos una formación y una trayectoria profesional diversa, pero compartimos una profunda preocupación por la crítica situación actual, así como la convicción de que desde el quehacer académico podemos contribuir a la transformación social. Tenemos por cierto, que el momento crucial que nos toca vivir implica una revolución

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<sup>2</sup> Esta ponencia fue presentada el 26 de octubre de 2005 en el 10° Encuentro Nacional sobre Desarrollo Regional en México, organizado por la Asociación Mexicana de Ciencias para el Desarrollo Regional (AMECIDER, A.C.), la Universidad Michoacana de San Nicolás de Hidalgo y la Universidad Nacional Autónoma de México. El presente texto fue publicado en *Problemática Territorial y Ambiental en el Desarrollo Regional*, coordinado por Rosalío Wences, et. al, octubre de 2005, México, © Asociación Mexicana de Ciencias para el Desarrollo Regional (AMECIDER, A.C.), la cual ha otorgado autorización para su reproducción en otras publicaciones.

cultural en la que la relación sociedad-naturaleza está siendo reformulada, e implica también, un vuelco que coloca el bienestar de los seres humanos que viven en el presente y los que están por venir, en el blanco al que apunta la mira. Por tanto, son el valor de la justicia y la lucha por la continuidad de la vida con toda su riqueza y diversidad, la brújula que orienta nuestro desempeño.

No basta con conocer y explicar la crítica situación, sino que es indispensable proponer y poner en marcha alternativas que incidan en la solución. Por tanto, nuestro trabajo se apoya en los postulados teóricos y metodológicos de la investigación-acción. “El conocimiento y la acción deben ser simultáneos por lo que surge un nuevo modo de acercarse a la realidad que emerge no de la contemplación, sino de la misma acción, lo que ha llevado a muchos autores a una epistemología de la praxis.” (Pérez Serrano, 1990: 65).

La aplicación de estos postulados, abre opciones para amarrar la investigación con la docencia y la vinculación, de manera que los estudiantes de licenciatura de varias carreras se integran a los estudios-acciones, que bajo estos conceptos, estamos llevando a cabo. Su incorporación a los trabajos del CEDES se da de tres maneras: a través de los alumnos inscritos en las asignaturas que impartimos (Ambiente y Desarrollo, Desarrollo Regional y Sustentabilidad, Metodología de la Investigación, Análisis Social y Económico de México, Economía, etc.), mediante la incorporación de prestadores de servicio social y mediante la participación de estudiantes voluntarios.

El proceso de re-educación, de aprendizaje por el que atravesamos no sólo los estudiantes, sino los investigadores, maestros, personal administrativo y de servicios, de la Sede La Barca, constituye el núcleo de este texto. Asimismo, se analizan las estrategias de las que hemos echado mano para desencadenar en la sociedad regional un proceso participativo a fin de contribuir a la conformación de una cultura para la sustentabilidad.

### *De qué depende la sustentabilidad de la región*

La sustentabilidad es un paradigma en construcción. Se refiere al proceso por el que transitan individuos, sociedades e instituciones, de la conciencia fragmentada a la conciencia de interrelación, de unidad. (Ortega, 2002: 28). Este paradigma surge en respuesta al agotamiento de la visión mecanicista y cartesiana del mundo, basamento sobre el cual descansa la civilización occidental. La agudización de las crisis económica, social, política, ambiental y de valores, intensifica los procesos de búsqueda, cuestionamiento y transformación de los que somos partícipes. Son tiempos de transición, reflexión y acción.

Si el objetivo principal del sistema económico vigente es producir más, incrementar el PIB, a la sociedad le corresponde en consecuencia, consumir más. De ello se encargan los mensajes emitidos a través de los medios masivos de comunicación, los cuales insistentemente y con un vasto poder de penetración y persuasión, nos aleccionan hasta el punto de confundir un mayor consumo de productos y de servicios, con una mejor calidad de vida. La mayoría de estos mensajes encumbran al individuo, a su comodidad, a sus logros, a su poder adquisitivo, a su apariencia física, sobre todo *lo demás*, sobre todos *los demás*. Son los bienes supremos a alcanzar. Y al ir tras este empeño, la percepción del individuo se estrecha al grado de perder de vista lo que le rodea, aun de su entorno inmediato. De ahí, su corta y fragmentada visión de la realidad. De ahí, su comportamiento rapaz e irresponsable. En este sentido, los mensajes actúan como “desactivadores” de su conciencia.

Lo anterior explica además, por qué el consumo *per capita* ha aumentado, por qué la generación de desperdicios por habitante se ha triplicado de los años sesenta para acá. (Carrillo, 13/01/03). La visión estrecha y fragmentada a la que nos referimos líneas arriba, queda de manifiesto en la incapacidad de establecer una relación entre la forma de vida que llevamos y el deterioro ambiental, entre las exigencias de nuestro tiempo y nuestro desasosiego. La culpa es siempre imputable a otros: autoridades de gobierno, empresarios, industriales, agricultores; o a los vecinos del país, del pueblo, de la colonia, o de la casa de enfrente. Y como los causantes del deterioro ambiental son los otros, nos quedamos paralizados esperando que la acción comience siempre en otra parte. Pero ¿cómo podremos asumir la responsabilidad por los productos y la energía que consumimos, por la estela de contaminación que dejamos a nuestro paso, si no nos percatamos de los nexos que existen entre ambas partes?

La sustentabilidad de la Región Ciénega depende de la conformación de una conciencia de interrelación, depende de los cambios en la percepción y en las acciones que emprenda la sociedad que la habita, tanto en su modo de vida como en la racionalidad de las actividades productivas que se llevan a cabo.

Es primordial reconocer que el bienestar individual futuro está supeditado a la creación y al mantenimiento de las condiciones que procuren el bienestar colectivo. “Si no hay futuro para todos, no hay futuro para mí”, como dice el Mtro. Ramón Vera.<sup>3</sup> A su vez, el bienestar de la sociedad regional, así como la posibilidad de generar desarrollo económico, dependen de la “salud” de los ecosistemas en donde los habitantes se asientan y de los que son parte integrante. Por ello, es fundamental aceptar de una vez por todas, como señala Enkerlin (1996: prefacio), que el orden humano pertenece al orden natural, que

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<sup>3</sup> Expresado verbalmente en el curso de Saberes Locales impartido en marzo de 2004, en la Unidad de Apoyo a Comunidades Indígenas de la Universidad de Guadalajara.

estamos subordinados a ese otro orden y a sus leyes, es decir, a una jurisdicción que rebasa la nuestra en tiempo, energía y espacio. Se trata entonces de diseñar y operar conjuntamente, bajo los postulados de una cultura más humana, justa y participativa, acorde con el orden subyacente del que emana la Vida, un modelo de desarrollo socioeconómico incluyente, más equitativo, que concilie la generación de riqueza económica con la preservación de la Naturaleza.

Por estas razones, los investigadores del CEDES, encaminamos nuestras actividades de docencia, investigación y vinculación, a la consecución de los siguientes objetivos generales:

- Desencadenar un proceso participativo en el que se involucren los actores sociales de la Ciénega, con los propósitos de inducir un cambio de conciencia, contribuyendo de esta manera a la construcción conjunta de una cultura para la vida, de una cultura para la sustentabilidad regional.
- Impulsar cambios en los hábitos y en las prácticas, con la finalidad de reducir el consumo de recursos naturales y de energía, y de disminuir la contaminación que generan el estilo de vida y las actividades productivas.

#### *Interacciones a explorar*

Entendemos conciencia como la capacidad que tiene todo ser humano de percatarse de lo que sucede dentro de sí, de lo que acontece en su entorno (natural y social), y de la relación bilateral que se establece entre ambas, es decir, cómo afecta el comportamiento del individuo al entorno y cómo a su vez, éste es afectado por dicho entorno. Por ello, para inducir la expansión de la conciencia a la que nos referimos, es menester poner el acento en las siguientes interacciones:

1. Establecer los nexos que existen entre la forma de vida personal-familiar y el deterioro ambiental, entre los productos que los pobladores consumen y su salud, entre la procedencia de los productos que acostumbran comprar y la repercusión que esto tiene en la economía nacional y regional.
2. Clarificar la relación que media entre la racionalidad de las actividades productivas, muy especialmente de la agricultura y el deterioro ambiental de la región. A su vez, cómo lo segundo, restringe el desarrollo futuro de las actividades productivas, afecta la salud y el nivel de ingresos de los productores.

#### *Principios*

Los principios sobre los que se construyen las estrategias que proponemos son los siguientes:

1. La fuerza principal que impulsa los cambios, el proceso de transformación que sacude a la sociedad entera, proviene del individuo. (Harman, 1994: 73). Son su conocimiento y su convencimiento, los motores que impulsan sus acciones. El paso de una visión fragmentada centrada en el “bienestar” personal, a la emergencia de una visión de interrelación tiene que ver con dos aspectos: el establecimiento de una congruencia entre el saber, el decir y el hacer, para estar en condiciones de asumir la responsabilidad por nuestros actos, y en segundo término, el percatarse de la estrecha relación que guarda cada individuo con su entorno, sea este social o ambiental.
2. La difusión de la crítica situación de la región, principalmente del aspecto ambiental, es medular. Sin embargo, el propósito no es alarmar, despertando en el interlocutor sentimientos de miedo, rabia o impotencia. En este reglón, lo fundamental es poner de manifiesto cómo cada habitante contribuye a agudizar la problemática, proporcionando al mismo tiempo, alternativas de solución al alcance de la mano que cualquier persona puede poner en práctica.

*¿Por dónde empezamos? ...  
Hacia una Sede Universitaria Sustentable*

Para alcanzar los objetivos generales que formulamos, necesariamente tuvimos que empezar por nosotros mismos, empezar por casa. Así, propusimos desde mediados de 2001 el proyecto de investigación-acción Hacia una Sede Universitaria Sustentable. Ante el desinterés mostrado por las autoridades del CUCiénega, decidimos implementar aquello que estuvo en nuestras manos y echamos a andar como una primera etapa, el Programa de Acopio y Reducción del Consumo de Papel en la Sede La Barca, en espera de que al rendir frutos, esta experiencia pudiera ser adoptada en las otras dos sedes. Con la esperanza también, de encontrar más adelante una respuesta positiva para la puesta en marcha de las etapas subsecuentes de este proyecto, como son los programas de separación de desechos, de plantación y cuidado de árboles, de sustitución de platos y vasos desechables de unicel por alternativas menos contaminantes, de uso de productos de limpieza amigables con el ambiente, de uso de insumos orgánicos para labores de jardinería, de captación de agua de lluvia, de producción de composta, de tratamiento de aguas residuales para su reutilización, etc.

Los objetivos del proyecto en sí son similares a los objetivos generales, aunque centrado el primero en la comunidad universitaria:

- Promover un proceso participativo en el que se involucre toda la comunidad universitaria (autoridades, estudiantes, y personal académico, administrativo y de servicios), con la finalidad de inducir un cambio de conciencia y en consecuencia, de conducta.
- A partir de la difusión del conocimiento, de nuestra experiencia y del ejemplo, convocar a otras instancias educativas, gubernamentales y del sector privado de la región Ciénega, a sumar sus esfuerzos a los nuestros.

*Primera etapa:*

*Programa de acopio y reducción del consumo de papel (PAP)*

A mediados de 2001, echamos a andar este Programa. Simultáneamente a la práctica de juntar papel y cartón en vez de tirarlo a la basura, realizamos una investigación sobre la destrucción de los bosques en nuestro país, así como de las acciones que el sector público emprende para atender este problema. En su mayoría, estas acciones son de tipo correctivo, es decir, intentan reponer con programas de reforestación, la estela de destrucción que dejan a su paso los taladores, con autorización o sin ella. Estas acciones son insuficientes para frenar la destrucción. Nos corresponde a los ciudadanos y muy especialmente a los universitarios reducir el consumo de papel virgen, recolectarlo para que sea reciclado e incentivar el uso de papel bond reciclado, preferentemente producido en México.

El apoyo de estudiantes voluntarios y de prestadores de servicio social ha sido decisivo para el programa. Además del interminable trabajo de clasificación de papel, los estudiantes han persuadido a compañeros, maestros, amigos, parientes y vecinos. Han recolectado papel de centros de copiado y otros negocios en La Barca. Han trabajado conmigo en la recopilación de datos, en la elaboración de un tríptico informativo, de periódicos murales y de una presentación en power point. Con este material de difusión hemos visitado más de cuarenta instituciones educativas y gubernamentales de los municipios de La Barca, Ocotlán, Encarnación de Díaz, Tecalitlán y Atotonilco, en Jalisco. Hemos estado en escuelas de Briseñas, Vista Hermosa, Cumuato, Cumuatillo, Saguayo, Yurécuaro, Jiquilpan y La Palma, en Michoacán. He impartido la plática en dependencias estatales y federales, como el Distrito de Desarrollo Rural 06 de la SAGARPA, en las oficinas de la PROFEPA y de la Secretaría de Desarrollo Rural de Jalisco; las dos últimas en Guadalajara.

No en todos estos sitios hemos obtenido una respuesta positiva. Tristemente, en algunos casos no hemos logrado despertar de su letargo a estudiantes ni a servidores públicos. En varios casos, nos hemos enterado que son las autoridades escolares o gubernamentales las que bloquean la decisión de sus subalternos de juntar papel y cartón. No obstante, hemos recibido en el

centro de acopio de esta sede, camionetas llenas de libros, cajas de archivo muerto y material de propaganda obsoleto, proveniente de escuelas primarias ubicadas en pueblos donde nunca hemos estado, o de oficinas de gobierno que se han enterado de nuestra labor por terceras personas, como son los casos del Instituto Federal Electoral y de la Comisión Federal de Electricidad, las dos localizadas en La Barca

La estrategia que adoptamos consiste en la presentación de las dramáticas cifras de la destrucción de los bosques, de las consecuencias, de las acciones que emprende el gobierno, pero sobre todo de la responsabilidad que como consumidores de papel todos tenemos. Hacer del conocimiento público que al tirar papel a la basura contribuimos indirectamente a la destrucción de los bosques, a la escasez de agua, a la erosión de los suelos, a la pérdida de la biodiversidad, ha sido impactante. Además, contribuimos al mayor endeudamiento externo en que incurrir las distintas secretarías de estado a fin de solventar las acciones que intentan frenar con poco éxito el deterioro ambiental, y por último, contribuimos a la fuga multimillonaria de divisas por concepto de importación de materia prima para la producción de papel, cuando este material puede reciclarse hasta 10 veces. Por tanto, es el convencimiento de cada persona, su motivación interna, el motor de este proceso; no un reglamento de carácter obligatorio, no puntos extra en la calificación, no una campaña pasajera para ganar una competencia.

El recibir papel proveniente de localidades, o instituciones, donde o con las cuales no hemos tenido contacto previo, pone en evidencia que existe cierta conciencia sobre el problema y que hay personas dispuestas a unirse a iniciativas como la que pusimos en marcha. Únicamente, se requiere alguien que dé el primer paso.

Es difícil cuantificar el impacto que ha tenido el PAP, porque el personal administrativo ha instituido la costumbre de imprimir mensajes internos y otros documentos para archivar, en el lado limpio de las hojas. Asimismo, algunos maestros y sus estudiantes utilizan papel de reuso para hacer tareas, trabajos en clase y exámenes. A pesar de ser una pequeña comunidad universitaria, reunimos de mediados de 2001 a fines de 2004, 8 toneladas de papel y cartón, lo que significa que hemos “salvado” la vida de 96 árboles adultos, “ahorrado” 224,000 litros de agua y 13,200 Kw/hr de energía.

#### *Segunda etapa: soplan los vientos del cambio*

Debido a que la coordinación administrativa de la sede es ocupada actualmente por una persona enterada y preocupada por el deterioro ambiental

de la región,<sup>4</sup> hemos contado con el apoyo necesario para implementar la segunda etapa del proyecto Hacia una Sede Universitaria Sustentable. Durante el segundo semestre de 2004, el grupo de estudiantes de Administración quienes cursaban la materia de Ambiente y Desarrollo, cuantificaron el consumo de recursos naturales y energía, así como la contaminación que genera la comunidad universitaria en la operación cotidiana de la Sede. Estos jóvenes entusiastas conformaron un grupo que bautizaron con el nombre de Conciencia Colectiva Estudiantil, CCE en breve, diseñaron un logo que los identifica, y abrieron una dirección de correo electrónico a la cual pueden dirigirse estudiantes y maestros interesados en unirse a este movimiento.<sup>5</sup>

Los aspectos que se cuantificaron son los siguientes: consumo de agua (sanitarios y riego), energía eléctrica, papel, productos de limpieza, etc. Con base en el número de viajes diarios que hace el camión que transporta estudiantes de La Barca a la Sede y viceversa, más el número de automóviles del turno matutino y del vespertino, cuantificaron los litros de gasolina y el aceite automotriz utilizado. Consideraron el reemplazo de llantas cada dos años. Hicieron además una estimación del peso y la composición de la basura producida en la cafetería, oficinas, patios y salones de clase. Cuantificaron los vasos y platos desechables de unicel utilizados semanalmente en la cafetería. Preguntaron en los 21 grupos de las tres carreras que se imparten en la Sede, quiénes contaban con celular, reloj de pilas, calculadora, walkman y discman. Esto con la finalidad de hacer un cálculo de los distintos tipos de pilas que se desechan y así poder medir la cantidad de litros de agua susceptibles de contaminarse con los metales pesados que contienen.

Con objeto de dar continuidad al proceso iniciado en 2004, los estudiantes de la CCE, se inscribieron en la materia optativa; Desarrollo Regional y Sustentabilidad, que también imparte su servidora. Estos estudiantes, aunque nerviosos y algunos renuentes, se rolaron para presentar en 7 fechas distintas, a los demás estudiantes y maestros, la información recabada y el impacto ambiental que producimos en conjunto todos los universitarios. Los resultados fueron impresionantes. Después de cada presentación organizamos talleres participativos para la generación conjunta de propuestas de solución, mismas que registramos en pliegos de papel revolución, para posteriormente sistematizarlas y darlas a conocer a la comunidad.

Paralelamente a estas actividades, estos estudiantes elaboraron 2 periódicos murales con los mismos datos de la presentación y los pegaron en los dos edificios de aulas. Realizamos una infructuosa investigación con el propósito de encontrar soluciones para la disposición de pilas usadas. No encontramos

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<sup>4</sup> Mtra. Paula Lourdes Guerrero Rodríguez

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alternativas en esos momentos, ni en las dependencias públicas (SEMARNAT ni PROFEPA), ni en la iniciativa privada. Un pequeño equipo de estudiantes averiguó sobre los precios de los relojes de pulso y de las calculadoras solares e hicieron un cuadro comparativo de los costos económicos y ambientales que implica el uso de estos productos en comparación con los que requieren pilas. Esto, con el fin de proporcionar a los universitarios la información pertinente para que su consumo sea responsable. Por último, hemos diseñado carteles, que basados en los logotipos y los lemas de productos comerciales, les hemos dado un sentido educativo.

A mediados de marzo y de mayo de 2005, llevamos a cabo dos jornadas de limpieza, que consistieron en la recolección de basura en los alrededores de los edificios y a lo largo de los 3 kilómetros del camino de acceso de la carretera al centro universitario. En ambas ocasiones recogimos aproximadamente una tonelada de basura. Esta actividad tan simple, produce una sensación muy gratificante, ya que en una hora y media un grupo de 30 personas puede hacer el cambio. Nuestros trofeos lo constituyen las 8 pilas usadas que recogimos en el camino, porque sabemos que con esto se evitará que se envenenen las tierras y se contaminen cientos de miles de litros de agua.

El programa de reforestación de la Sede contempla la participación de los maestros y los alumnos de los 5 primeros semestres de cada carrera que estén dispuestos a asumir voluntariamente el compromiso de sembrar un árbol, regarlo, abonarlo y cuidarlo hasta que terminen sus estudios. A fines de mayo, se plantaron los primeros 25 árboles y se tiene planeado que por lo menos una vez cada semestre, se incorporen más universitarios convencidos en esta labor.

“Si la basura nace de la revoltura”, como señala el Mtro. Salvador García Ruvalcaba del Centro Universitario de la Costa Sur, es deber de los universitarios, es deber de todo ciudadano, separar sus desechos. Ante la urgente necesidad de hacerlo, contamos los botes de basura existentes, así como los botes necesarios para su clasificación por tipo. Después de largas horas de investigar en internet dimos con una compañía establecida en Guadalajara que recicla plásticos de la clasificación tipo 1 y 2, es decir, de botellas de refresco y agua, y de envases de leche, respectivamente. La compañía enviará a la Sede un camión recolector cada vez que reunamos dos toneladas de plástico. Por otro lado, una empresa de Ocotlán donó los botes que requerimos para poner en marcha el programa. El personal de servicios generales de la Sede La Barca, los pintó de diferentes colores de acuerdo a la convención internacional. La participación del personal de servicios ha sido decisiva en el proceso de reeducarnos.

Nos esperan otras tareas al inicio del segundo semestre de 2005, como el persuadir a los estudiantes y maestros y demás personal a traer al flamante

centro de acopio de plásticos de esta sede, los envases que se desechan en sus casas, y en las pequeñas localidades donde residen. Está pendiente además, la preparación del terreno para la elaboración de los desechos orgánicos generados en la cafetería. El compost resultante será utilizado para abonar los árboles y las jardineras de la Sede.

### *Tercera etapa: Programa de acopio de pilas usadas*

A fines de junio del presente año, apareció en un periódico de Guadalajara, una noticia sobre la empresa Battery Master,<sup>6</sup> localizada en esa ciudad, que vende todo tipo de pilas y que a su vez, ofrece a la ciudadanía sin costo, el servicio de juntarlas y enviarlas a Monterrey para su confinamiento en un sitio especial y/o para la recuperación de algunos metales pesados que contienen. La noticia abrió perspectivas halagüeñas para su correcta disposición, por lo que el centro de acopio de papel establecido en la Sede La Barca, fungirá también como centro de acopio de pilas usadas. Las actuales autoridades del CUCiénega, han dado su apoyo, por lo que las Sedes Ocotlán y Atotonilco, serán también lugares de acopio. Se suman a esta iniciativa 5 empresas comerciales de La Barca, a fin de ofrecer a los habitantes de la región varias opciones para entregarlas.

La Dirección de Extensión Universitaria de nuestra casa de estudios, recientemente empezó a transmitir a través de Radio CUCiénega de la Universidad de Guadalajara, promocionales convocando a la ciudadanía de la región a llevar las pilas usadas a las sedes universitarias. También, durante La Hora del Agricultor, que se transmite por la estación de radio comercial, XELB La Buenísima, en el 109.7 AM, hemos informado de la toxicidad de las pilas, de los graves daños que producen a la salud y al ambiente, invitando a los habitantes a llevarlas a los centros de acopio universitarios o a los negocios de La Barca, que se han unido a esta iniciativa.

Es parte de este programa, el contabilizar las pilas reunidas por tipo, a fin de informar periódicamente a la ciudadanía de los avances del programa, así como del volumen de agua que dejará de contaminarse con los metales pesados que éstas contienen.

### *Sobre las estrategias*

Anotamos previamente los principios en los que se fundamentan las estrategias de este proceso: los motores del cambio son el conocimiento y el convencimiento de cada individuo, y en segundo término, la difusión de la

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<sup>6</sup> Battery Master se localiza en Av. México 3235, contra esquina del centro comercial Plaza México, en Guadalajara..

crítica situación ambiental debe enfatizar cómo cada persona contribuye con su forma de vida a agudizar la problemática, proporcionando al mismo tiempo alternativas de solución que faciliten la sustitución de prácticas no sustentables, por otras que sí lo sean. Ambos principios han estado presentes en las tres etapas del proyecto; en las actividades académicas realizadas fuera del campus, en las labores de gestión, y muy especialmente en la difusión del conocimiento, dentro y fuera de la universidad. David González García, ahora egresado de la licenciatura en Administración, sintetizó atinadamente el primer principio: "Si yo cambio...cambia el mundo". Respecto al segundo, consideramos que el conocimiento debe servir para hacernos libres, para crear, para resolver problemas. Debe servir para transformarnos a nosotros mismos, para incidir en la transformación social de la región donde se inscribe la universidad

El camino que recorreremos, no es lineal, no es secuencial, es decir, que primero se implementan los programas al interior de la universidad, y luego a partir de los resultados obtenidos convocamos a la sociedad a reflexionar y a hacer lo suyo. Este proceso ha sido muy dinámico, a veces simultáneo y en ocasiones impredecible. Es una especie de flujo al que se suma el caudal de nuevos afluentes y del que emanan derivaciones para irrigar otras áreas.

Anotamos en el preámbulo, que a la Sede La Barca acuden estudiantes de localidades que se sitúan dentro de un radio de 35 km. Una mitad aproximadamente reside en Michoacán y la otra, en Jalisco. Esta zona es eminentemente agrícola, por lo que muchos estudiantes son agricultores o pertenecen a una familia de agricultores. Las características particulares del alumnado de la Sede, nos ha hecho adecuar los contenidos de las materias que impartimos a su realidad.

Los más despiertos se han dado cuenta de la problemática económica, social y ambiental de sus lugares de residencia y al ser portadores de información y de alternativas de solución para sus comunidades, se han convertido en agentes de cambio. En el otro sentido, es decir, de su localidad a la universidad, han actuado como mensajeros, ya sea transportando papel y cartón al centro de acopio, solicitando material de difusión o impartiendo pláticas en la escuela primaria, en la telesecundaria, a los padres de familia y/o a las amas de casa. Esta relación bilateral que se establece entre la universidad y las localidades, vía los estudiantes, será aprovechada también para el programa de acopio de pilas y para transportar a esta sede, envases de plástico de sus comunidades de origen.

*Experiencia con las dependencias gubernamentales*

Hemos tocado puertas en los ayuntamientos con la intención de persuadirlos de instituir en sus oficinas el programa de acopio y reducción del consumo de papel. Para ello, hemos ofrecido dar las pláticas que sea necesario para convencer a los empleados públicos de cambiar sus hábitos. En La Barca, no hemos tenido suerte con dos administraciones municipales, ni tampoco en Vista Hermosa, Mich., cuando entablamos contacto con la administración municipal pasada. En el segundo caso, el presidente municipal, ya estaba en tratos con una compañía para la instalación de un relleno sanitario para “desaparecer” la basura generada en su jurisdicción y en los 4 municipios contiguos.

A pesar de la renuencia de las autoridades municipales de La Barca, hicimos un nuevo intento, al aproximarnos al responsable de la oficina de Aseo Público, con objeto de trabajar conjuntamente un programa de separación de desechos. Nuestra tenacidad, o terquedad, se estrelló contra la pared otra vez.

Fuimos invitados a organizar e impartir dentro del Seminario de Actualización de la Administración Municipal, un taller que denominamos “*Taller para la construcción de una cultura de la sustentabilidad*”, dirigido al presidente municipal electo de Ocotlán, Sr. Juan Manuel Alatorre, y a su grupo de trabajo, en septiembre de 2003. No obstante la oportunidad que surgió a resultas de nuestro contacto, no prosperaron nuestras intenciones para la definición y operación conjunta de programas relativos a lo ambiental.

Acudimos al llamado de la Regidora de Participación Social del Municipio de Encarnación de Díaz y al llamado de la Regidora de Ecología del Municipio de Tecalitlán. En el primer caso, nos topamos con una administración municipal dinámica y con visión de más largo alcance, donde rápidamente se dieron cuenta de las ventajas de instituir el programa de acopio de papel y además, estaban dispuestos a poner en marcha el de separación de desechos. En el segundo, nos encontramos con una administración priísta que descalifica toda iniciativa de los servidores públicos que no son de su partido, por lo que no prosperó la propuesta.

Nuestra experiencia con los ayuntamientos ha sido infructuosa, excepto en el caso de Encarnación de Díaz. Prevalece la visión cortoplacista, partidista y la inversión de recursos y tiempo en atender urgencias, soslayando y posponiendo lo que es fundamental para el futuro de los municipios, para el futuro de la región. Por otra parte, nos queda claro que la estrategia que adoptamos, no ha sido la adecuada. Requerimos explorar otras formas de aproximarnos a las autoridades municipales.

Corrimos con mejor suerte en las oficinas de la PROFEPA (Procuraduría Federal de Protección al Ambiente) y en las de la Secretaría de Desarrollo Rural

de Jalisco, donde fuimos invitados a impartir la plática sobre la problemática de la destrucción de los bosques y las acciones que podemos emprender para incidir en su solución. En las dos oficinas funciona desde hace meses, un programa de acopio de papel. Las oficinas del Distrito de Riego 6 de la SAGARPA, envían a la universidad el papel que juntan.

### *Estrategias de difusión social*

Hemos involucrado a los alumnos, que cursan materias con los investigadores del CEDES, en la realización de actividades extrauniversitarias, como es el caso de la programa para el Día Mundial del Ambiente (5 de junio) y la participación del CUCiénega en la Semana Nacional de la Conservación, a la cual convoca la SEMARNAT, la última semana de noviembre de cada año. En ambos momentos, son los estudiantes de La Barca y de Ocotlán, los encargados de impartir pláticas en instituciones educativas de la región, bajo los principios descritos. Además, hemos organizado jornadas de limpieza en las márgenes de los ríos Lerma, Zula y Santiago, y hemos plantado árboles en diversos sitios. En esta actividad hemos participado también los investigadores y algunos maestros entusiastas se han unido a la causa. Desafortunadamente, debido a que se redujo el número de semanas por semestre en toda la Universidad de Guadalajara, este año no fue posible realizar actividades relacionadas con el Día del Ambiente, porque para esas fechas los estudiantes están en exámenes.

Nos hemos presentado en cinco ocasiones en el canal de televisión local de La Barca; en la XEJB, radiodifusora del gobierno de Jalisco; en Radio CUCiénega de la Universidad de Guadalajara; en XELB, La Buenísima, estación de radio comercial con cobertura regional, en la que compartimos con SEVA desde mayo de 2004, un programa semanal llamado La Hora del Agricultor.

Con más de dos años al aire, este programa tiene un rating alto, principalmente en las pequeñas localidades de la región. Ahí, se han presentado en numerosas ocasiones los estudiantes a dirigir mensajes a otros jóvenes. Mediante nuestra intervención pretendemos contribuir a sentar las bases de un desarrollo rural sustentable, abordando temas de reflexión a fin de que los radioescuchas comprendan cómo sus hábitos de consumo afectan su salud, el ambiente y la economía regional. Asimismo, ofrecemos alternativas de solución que están al alcance de su mano.

Nuestro aporte complementa y refuerza los temas que trata el Sr. Raúl Medina de Witt, conductor del programa y responsable de SEVA, relacionados con la producción agrícola orgánica y con las cadenas productivas. En reiteradas ocasiones, presenta con sencillez y claridad cómo las prácticas agrícolas no sustentables, derivadas de la racionalidad de la agricultura industrial, han

actuado en detrimento de la salud de los trabajadores del campo y sus familias, y en detrimento también, de la calidad de los productos cosechados y del ambiente, principalmente del suelo. Un suelo pobre en materia orgánica y poco fértil, a su vez, requiere de la aplicación de mayor cantidad de insumos químicos para mantener igual productividad, y requiere también, de mayor cantidad de agua, porque no retiene la humedad. Mientras más pobres son los suelos, mayor es la susceptibilidad de los cultivos a ser atacados por plagas y/o a contraer enfermedades, y obviamente, menores serán las ganancias para el productor.

Los integrantes de SEVA <sup>7</sup> son pioneros en la región en lo que a producción agrícola orgánica se refiere. Sus tierras certificadas están libres de residuos tóxicos y cultivan hortalizas y granos. Cuentan con una tienda de insumos e implementos para la agricultura sustentable y han sido incansables promotores de las bondades de este tipo de agricultura, organizando cursos, talleres y brindando asesoría a los productores de la región. La labor conjunta universidad-SEVA se retroalimenta y enriquece. Nos ha permitido llegar a radioescuchas de rancherías muy alejadas del campus, dispersas en el territorio.

### *Difusión académica*

Desde el establecimiento del CEDES, en 2001, hemos presentado ponencias en foros nacionales e internacionales. Entre ellos están el Foro de la Cuenca Lerma-Chapala (2001), organizado por la Subcomisión Cuenca Lerma-Chapala-Santiago de la Comisión de Recursos Hidráulicos del Senado de la República, el 7° Encuentro Nacional sobre Desarrollo Regional en México (2002), organizado por el Amecider y el Instituto Tecnológico de Acapulco; el Simposio de Comunidades Sustentables (2003), organizado por Corazón de la Tierra A. C., la Universidad del Norte de Texas y el DIF; el Simposio Estatal de Desarrollo Rural Sustentable organizado por el Centro Universitario de Ciencias Biológicas y Agropecuarias de la Universidad de Guadalajara; el Congreso Internacional Environmental Management and Sustainable Universities III (2004), cuya sede fue el Tecnológico de Monterrey, campus Monterrey; en el IV Congreso Internacional y X Congreso Nacional de Ciencias Ambientales (2005), organizado por la Universidad de Quintana Roo y la Amecider. Por otro lado, consideramos que el compartir experiencias con ponentes de otras universidades y de otras latitudes, es la mejor forma de actualizarse, de evaluar nuestro desempeño, de conocer las tendencias del cambio.

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<sup>7</sup> SEVA es parte de la Fundación Miguel Sánchez del Río, A. C., la cual desde hace 20 años ha llevado a cabo numerosos programas de asistencia social, educativos y en defensa del ambiente, en la región Ciénega. Para mayor información consultar la página web [www.sevamexico.com](http://www.sevamexico.com)

Organizamos el II Coloquio de la Sustentabilidad de la Ciénega: “soluciones probadas al alcance de la mano”, dentro del marco de la Tercera Semana Nacional de la Conservación de la Naturaleza (SEMARNAT). El encuentro se llevó a cabo los días 27 y 28 de noviembre de 2003, en la Sede Ocotlán. La estructura del programa estuvo dividida en 4 mesas de trabajo: Grandes tendencias del cambio, Vinculación universidad-gobierno, Experiencias en la industria y Comunidades sustentables. Se presentaron 3 ponencias en cada mesa, y al concluir éstas se abrió un espacio de media hora para intercambiar puntos de vista. Previo a la sesión de clausura, se presentaron las síntesis de las 4 mesas y las conclusiones finales. El formato participativo del encuentro, más las experiencias que se presentaron animaron mucho a los asistentes, en su mayoría estudiantes universitarios de varias carreras. A juzgar por el interés demostrado y por el deseo, expresado por algunos, de integrarse a las labores del CEDES en calidad de voluntarios, nos dio pistas del potencial disponible para hacer el cambio.

Hemos compartido experiencias con los estudiantes y tutores de la novena y décima generación del programa LEAD (Leadership for Environment and Development), auspiciado por la Fundación Rockefeller, quienes hicieron dos viajes de estudios a la Región Ciénega, en 2002 y 2003.

Artículos derivados de las ponencias, que en sí constituyen los avances y las reflexiones del proceso de investigación-acción que hemos vivido, han sido publicadas en revistas universitarias, y en páginas electrónicas. Sin embargo, aunque la actividad académica ha sido intensa, estimamos que para alcanzar los objetivos que formulamos, la información que transmiten los estudiantes a sus comunidades, el material de difusión que hemos entregado y las transmisiones a través de la radio y del canal de televisión local, han sido medios más eficientes que las publicaciones impresas en papel y electrónicamente.

#### *Resultados obtenidos*

Sería tal vez prematuro hablar de resultados, aparte de los modestos logros enumerados a lo largo del texto, sin embargo, pensamos que la energía que hemos disipado en conjunto, es como la piedra que cae al estanque, genera un movimiento suave que forma círculos concéntricos que se expanden, cuya repercusión es difícil de medir y de prever.

Las últimas generaciones de estudiantes que han cursado la materia de Ambiente y Desarrollo, han mostrado interés y entusiasmo por realizar acciones fuera del campus, por participar en la elaboración de material de difusión, e incluso, un pequeño grupo propuso como trabajo final, pintar una barda de su colonia con un mensaje para el cuidado del ambiente. Interpretamos este interés

como la necesidad de sentirse parte de un grupo universitario que actúa en beneficio de la sociedad.

En aquellos casos cuando el conocimiento y la experiencia adquirida por ciertos estudiantes, cala hondo y logra trastocar su percepción y entendimiento respecto a sí mismos y a su relación con el mundo, deja de ser mero requisito para aprobar la materia, para obtener el título. Opera entonces, una transformación interna en la que la lucha por la continuidad de la vida, la lucha por el bienestar de su comunidad, se convierten en su causa y de paso, puede convertirse en una opción de ejercicio profesional, en un modo de generar ingresos.

Jaime Zaragoza Echevarría, oriundo del poblado de Zalamea, recién egresado de la licenciatura en Administración, conciente de los nexos existentes entre las lluvias y las zonas arboladas, por iniciativa propia echó a andar un vivero abandonado en su lugar de residencia. Cultiva árboles e invita a sus paisanos jóvenes a plantarlos y regarlos en el campo deportivo de su pueblo. Ha convencido a los agricultores de la tercera edad, como él los llama, a encargarse del cuidado de los árboles que junto con ellos planta en los límites de las labores. Colecta semillas de especies endémicas y de especies bien adaptadas a la ciénega, transplanta en bolsas negras los árboles que naturalmente germinan en los campos de cultivo. Con el propósito de elevar la tasa de sobrevivencia de los renuevos plantados, investiga y experimenta con el uso de productos no nocivos para el ambiente y con técnicas de plantación más eficientes. Los vende a bajo costo, con el objeto de financiar la compra de insumos para continuar reproduciéndolos.

Mónica Hernández Dávalos, estudiante del último semestre de Administración, vive en la localidad de mil habitantes llamada Guadalupe de Lerma. Desde 2004 comenzó a separar los desechos generados por los integrantes de su familia. Habilitó unas caballerizas en desuso como lugares de acopio para almacenar envases de plástico (leche, refresco y agua), cartón, vidrio y metales. Ha persuadido a parientes, vecinos y conocidos a separar sus desechos por tipo y a llevarlos a su domicilio.

A principios del año en curso, echamos a andar un proyecto denominado "Guadalupe de Lerma: una Comunidad Sustentable". Aparte de Mónica y su servidora, participan 4 estudiantes prestadores de servicio social. Hemos trabajado con un grupo de amas de casa, y con el director, los maestros y los alumnos de la primaria de esta localidad. A petición de los maestros conseguimos material didáctico para niños. Este nos fue proporcionado por el CECADESU (Centro de Estudios y Capacitación para el Desarrollo Sustentable), dependencia que pertenece a SEMARNAT. Entre el material recibido está el



video “El Hombre que Plantaba Árboles”, el cual relata la historia real de un francés quien plantó solo cientos de hectáreas de bosques a principios del siglo 20. La proyección de este video, causó un gran impacto entre los niños, deseosos de participar en la plantación de árboles en su comunidad y en el programa de separación de desechos de su escuela. Mónica ha videofilmado algunas actividades y los cambios que se han operado en esta escuela a fin de contar con un registro del proceso y de los resultados que se van teniendo. Hemos reflexionado respecto a los aciertos y a los tropiezos que hemos tenido en esta experiencia, con el fin de construir a partir de la práctica una metodología que nos permita trabajar con otras comunidades.

Mariano Mata Ordaz, joven emprendedor de Vista Hermosa, Michoacán, egresado también de la licenciatura en Administración, elaboró el protocolo de un proyecto para el manejo y disposición de desechos urbanos con el propósito de ofrecer sus servicios al ayuntamiento. Analiza la problemática de la basura municipal, los costos cada vez mayores de su recolección, principalmente por las distancias que los camiones recorren para depositarla en los basureros. Propone la implementación de un centro de acopio de desechos reciclables y su comercialización, así como la habilitación de un espacio para la producción de composta a partir de los desechos biodegradables generados por la población. Otra propuesta tiene que ver con la estrategia de difusión y educación ambiental necesaria para la puesta en marcha del proyecto, en la cual él fungirá como responsable.

### *Amarre final*

Este amarre se da en dos sentidos. El primero se refiere al proceso único en el que se fusionan la docencia, la investigación y la vinculación de la universidad con su entorno. Dicho en otros términos, se integran la transmisión y la generación de conocimientos, con la transformación social. Aprendemos actuando, investigando; aprendemos en el intento de convencer al otro, aprendemos de las reflexiones que suscita nuestro hacer. Estos elementos en conjunto van perfilando un método alternativo más centrado en el aprendizaje que en la enseñanza.

El segundo se refiere a la construcción del paradigma emergente de la sustentabilidad. Este consiste por tanto, en los pasos que median entre la conciencia fragmentada individual (centrada en sí misma, en la obtención de satisfactores personales efímeros, que asume dócilmente el rol de infatigable consumidor asignado por el sistema económico imperante y su parafernalia publicitaria, ajeno a lo que sucede a su alrededor, en términos de la deshumanización y del deterioro ambiental que prevalecen), a la conciencia expandida de un individuo que se percata de lo que está aconteciendo en el

entorno social y ambiental y de cómo esto a su vez, repercute en su bienestar individual y en el bienestar de las generaciones por venir. Es por propia conveniencia que urge a hacer el cambio, a asumir la responsabilidad por su estilo de vida, por el sistema productivo. Contempla como deber insoslayable reducir el consumo de recursos naturales y energía, así como la generación de contaminantes.

El hecho de descubrir que la construcción de escenarios futuros promisorios, descansa en los cambios que la propia sociedad regional emprenda, devuelve esperanza, da poder de decisión y margen de maniobra. Por tanto, no estamos a expensas de la buena voluntad que desplieguen los políticos en turno; ni de que la normatividad en materia ambiental sea acatada por los industriales; ni de que sea aprobada, entre en vigencia y se aplique la ley de manejo de residuos tóxicos, por ejemplo. No es menester esperar a que esto suceda, sino que está en nuestras manos contribuir a la solución.

En la medida en que un mayor número de pobladores logre expandir su conciencia nos daremos cuenta del gran poder que existe en una sociedad informada, dispuesta a luchar por el bien común y a actuar en concierto. Dejaremos de ser víctimas del sistema económico, de las autoridades de gobierno más atentas al desenvolvimiento de sus carreras políticas que al mejoramiento de las condiciones de vida de aquellos a quienes supuestamente representan, para asumir un rol activo, protagónico en el porvenir de la sociedad regional. Es papel y en gran medida responsabilidad de los educadores el impulsar los procesos de crecimiento de la conciencia.

En síntesis, estos son los programas, las estrategias y las reflexiones derivadas de nuestro hacer, un pequeño aporte desde la Sede La Barca en el gran proceso de edificar hombro con hombro una cultura para la Vida, una cultura para la sustentabilidad regional.

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## Results of a County-Wide Nature Tourism Project in Rural Oregon: Ten Years On

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The Curry County Sustainable Nature-Based Tourism Project, proposed in 1993 and funded and initiated in 1994-98, involved several international leaders in ecotourism at the time. Nine new businesses were started, each slightly different so that cooperative marketing could occur. A central reservation system for guides was also established, along with training for workers diversifying from declining fisheries and timber supplies. Limits of acceptable change was used, rather than carrying capacity, as an assessment tool to limit impact. A forest canopy walkway and visitor center was also proposed.

Curry County Sustainable Nature-Based Tourism Development

Curry County, located on Oregon's South Coast, was concerned in the early 1990s with promoting economic diversification through sustainable nature-based tourism. Creating a new economic sector through this sustainable tourism was the vision of Curry County leadership who had observed steady declines in the timber and fisheries industries. Building the capacity of community members to work together in decision-making about the area's economic future (despite polarizing conservation/timber wars) was a priority of this long-term strategy.

Tourism in Curry County traditionally relied on jet boat trips, sport fishing (also in decline), and scenic-drive tourism along coastal Highway 101. The county sought to develop more reliable, year-round markets based on its world-class natural resources: scenic coastline, old-growth redwoods, and unique botanical and geological diversity.

The USDA Forest Service acted in partnership with Curry County and the Northwest Economic Adjustment Initiative (part of the Northwest Forest Plan) to bring in the expertise of Egret Communications, who served as facilitators and consultants. Egret Communications, who were instrumental in coordinating the World Congresses on Tourism and the Environment the previous three years, introduced international leaders in sustainable tourism development to the local effort. Funding totaled over \$250,000.

The Curry County Sustainable Nature-Based Tourism Development Project incorporated sustainable tourism concepts by including sustainability

planning, product development, business training, and marketing, and local partnerships (Forbes 1998).

*Sustainability planning* consisted of a local steering committee; environmental and social conflict assessments to avoid unacceptable impacts to local resources or established uses; and design of a local revenue-return system to sustain resources. International leaders in ecotourism planning were brought in to work on: social assessment, including Elizabeth Boo, author of the primary book on ecotourism at the time (Boo 1991); and environmental assessment, including Stephen McCool, the primary researcher of Limits of Acceptable Change planning at the time (McCool 1994).

*Product development* consisted of nine new businesses, each slightly different so that cooperative marketing could occur: mountain bike tours, river kayak tours, offshore/marine tourism (whale watching, pelagic bird watching), art workshops, photography workshops, lighthouse and cranberry bog tours, interpretive hiking tours, ranch stays, and an executive retreat.

*Business Training* consisted of standard technical start-up assistance for existing and new businesses (emphasizing displaced fisheries and timber workers) as well as tourism-specific training in preparation for enhanced roles in the new economic sector. Out of state expertise in tourism was brought in, such as the director of tourism for the state of Wyoming, to assess products in the development stage.

*Marketing* included development of marketing publications, a niche market analysis to maximize limited marketing resources, and events that brought in national and global travel operators and writers. A central reservation system for new and existing guides was also established.

*Local partnerships* included a county-wide steering committee comprised of representatives of local land management agencies (Forest Service, Bureau of Land Management, Oregon State Parks), local tourism businesses (inn and motel owners, concessionaires), conservation organizations (e.g., Siskiyou Coast Explorers Club), and local government. Committee members also met with additional local groups including the timber and fishing industry, real estate, chambers of commerce, and senior citizens.

#### Project Results

*Sustainability planning* had mixed results. Several steering committee members perceived that products and protocol, including a proposed old-growth forest canopy walkway and visitor center, had already been decided without their input, and that little forum was given in early meetings for feedback. Several prominent local conservationists, including influential leaders of the local Audubon Society chapter, gave early resignations from the steering committee after perceived lack of openness to input. Design of a local revenue-return system to sustain resources was not conducted nor implemented. Revenue return and local input are common obstacles in ecotourism projects that need to be more adequately addressed industry-wide (Honey 1998).

Positive results included the social assessment by Boo, which helped bring out local concerns, including perception of a process driven by consultants and not locals. Those left on the steering committee did have later input and supported the project. The Limits of Acceptable Change assessment by McCool was one of the first efforts to move away from carrying capacity. Simple reliance on carrying capacity, or number of visitors, could result in the same impacts if specific behavior of a small number of visitors was not addressed (McCool 1994). By addressing specific past and potential impacts of visitors, such as waste left by river kayakers, Limits of Acceptable Change did not unnecessarily place restrictions on the number of customers for start-up businesses and more accurately addressed potential impacts and local concerns.

*Product development* was initially successful. Four of the nine new businesses survived five years later, which is a healthy percentage of survival in small business start-up. The four remaining businesses were river kayak tours (the first start-up), offshore/marine tourism (whale watching, pelagic bird watching), art and photography workshops, and ranch stays. The latter was the most successful improvement, a major expansion of previously limited lodging (Curry County 2001). Ten years on, while jet boat tours still thrive, ranch stays exist, and occasional workshops occur, the kayak tours are the primary product remaining from the project. Other indirectly related ventures such as Flora Pacifica diversify the economy through export catalog sales of wreaths made from local organic crops and non-timber forest products such as boughs (Mitchell 2006).

Also proposed was a walkway suspended in an old-growth forest canopy, similar to those that attract travelers to tropical forest sites. A site was selected and a \$19 million coastal visitor center and inland walkway was conceptually designed. The plans won an award from the American Society for Landscape Architects for design in an environmentally sensitive area. The walkway was seen as the key attraction of the whole project around which other business development depended (Mitchell 2006).

However, Oregon's South Coast is made up of numerous retirees, many of whom recently moved there from California to enjoy the quiet, undeveloped character of the area. Thus, a proposal to place a major tourism attraction in the middle of the county was met with consternation. A ballot initiative developed to oppose the canopy walkway won approximately two-thirds of the vote (Mitchell 2006).

Additionally, many of the same conservationists who had been instrumental in lobbying for old-growth forest protection and had resigned from the tourism steering committee lobbied to Washington, D.C. with concerns about the canopy walkway and visitor center. Lack of initial local support, old-growth forest impact, perceived increase in traffic and infrastructure, and subsequent population growth were key points of contention. After this opposition effort,

key local agencies such as the USDA Forest Service dropped their support for the canopy walkway and visitor center.

Ironically, the same design team worked on the now-implemented Tillamook Forest Center on Oregon's North Coast (Tillamook Forest Center 2006). This effort has brought in approximately 11 million dollars and 136 jobs to the community during the construction phase. It is expected the Center will provide 30 jobs and bring in approximately 1.5 million dollars annually. The area around the Tillamook Forest Center has a younger population and better tradition of working together than does Curry County. A major housing development with 1,000 units has now been approved in Curry County approximately ten miles south of the rejected visitor center site (Mitchell 2006).

*Business Training* consisted of standard technical start-up assistance for existing and new businesses. This consisted of county extension service workshops on business start-up and management that were open to the general public. Tourism-specific training also took place in the form of coaching of the nine start-up businesses by chief consultants Egret Communications.

A common difficulty in transitioning displaced workers to tourism is the need for high-quality products and customer service when first promoting a region. Much of a locality's start-up marketing is dependent on word-of-mouth from initial customers. Additionally, it has been recognized for some time that most new jobs are created by existing business expansion (Birch 1987). For these reasons, most of the nine new businesses were created by expansion of those already within the tourism industry. Examples include a bed and breakfast expanding into bicycle tours and a ranch with a few guest rooms upgrading into a more marketable destination hub for local nature tours. One new business, river kayak touring, was started by a displaced timber worker.

*Marketing* included development of marketing publications and websites, including a "Exploring the Siskiyou Coast" booklet with advanced color photography by Egret Communications. Small marketing events that brought in national and global travel operators and writers helped draw publicity to the project and region. Self-authored articles also helped maximize limited advertising resources. The few advertising dollars spent were maximized through niche market analysis, rather than more expensive broadcast advertising in wide markets. Niche markets were identified through outdoor travelers, nature enthusiasts, artists, and photographers in urban centers in North America and Europe. Materials were sent to corresponding outbound operators and organizations.

One of the more successful parts of the project was implementation of a central reservation system for new and existing guides. The county already had numerous fishing guides for its two world class salmon fishing rivers, the Chetco and Rogue Rivers, in addition to river rafting and jet boat tours on the Rogue River. The central reservation system allowed access to a far wider customer base through cooperative marketing.

*Local partnerships* continued and expanded to include the adjacent county in northern California. Del Norte County includes the Wild and Scenic Smith River, the only major undammed river remaining in California. The two similar counties now market themselves as America's Wild Rivers Coast (Gold Beach Chamber of Commerce 2006). Additionally, jet boat tour firms, in previous conflict with USDA Forest Service Wild and Scenic River regulations on numbers of boats, latched on to sustainable nature tourism concepts to promote their products.

Overall, Curry County (2001) was satisfied with the results of the project after five years. Despite inevitable social conflicts and predictable failure of some new businesses, the project gave County entities a new perspective on tourism. The Curry County Sustainable Nature-Based Tourism Project changed the way both small and medium-sized firms and a two-county region market and conduct business ten years later (Gold Beach Chamber of Commerce 2006).

However, ten years on, after expense of considerable time and resources, the failure of the canopy walkway and visitor center looms as a lesson for other ecotourism development projects. Although similar projects such as the Tillamook Forest Center can occur through more simple, top-down planning processes, the Curry County canopy walkway and visitor center would have been placed in a more pristine, less developed location containing citizens more concerned about the rate of County growth.

Although considerable bottom-up support was generated through the Canopy walkway steering committee, broad-based consensus including citizens' ideas early in the entire tourism project process may have nixed the canopy walkway and visitor center proposal before so many resources were put into it. Creative alternatives may have been developed. Later opposition came from different sources than the initial conservationists and this opposition may have been hard to predict.

However, more modest, low-level development projects based on existing infrastructure may be a more efficient and politically acceptable way to meet local needs while protecting the character and natural resources of these remote, scenic areas.

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## Rural Nature Tourism across the US-Mexico Border: Differences as Opportunities

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### *Introduction*

Rural nature tourism takes on different forms in the US versus Mexico. This leads to independent US visitors to natural areas potentially encountering different conditions than expected, such as limited signage, trash-lined roadways, and military patrols.

Yet the very conditions that frustrate some independent travelers can also increase the attractiveness for visitors on package tours guided by locals. Ecotourism is often developed through the concept of lower-volume, higher-priced packages that can minimize impacts while still generating significant revenue. Predictability of visits can reduce stress on both local culture and guides with multiple livelihoods.

Remote locales such as Cozumel Island on the Yucatan Peninsula, El Cielo Biosphere Reserve in the Sierra Madre Oriental and the Rio Gavilan in the Sierra Madre Occidental have considerable attraction as sites significant in coastal resources, bird diversity, and conservation history, respectively.

Limited access for other tourists, by reduced information rather than regulation, increases the exclusivity of the sites for guided tourists. Such exclusivity can enhance the price and thus generate the low impacts and needed revenue with fewer visitors. Local ownership of this exclusive access is difficult but critical to maintain to enhance community conservation and development and follow concepts of ecotourism. This paper outlines details of each site and recommends policies for future management.

### Three Remote Natural Destinations in Mexico *Cozumel Island, Quintana Roo, Mexico*

Cozumel Island is located off the northeastern coast of the Yucatan Peninsula, in the state of Quintana Roo, Mexico. It lies on top of the largest reef system in North America. The main economic activities are tourism, its subset of

ecotourism, and commercial, sport, and subsistence fishing (SECTUR 1994). The west side of Cozumel Island is well-known to travelers for its diving, snorkeling, beach resorts, and cruise ship stopovers. However, the east side and central position of Cozumel Island holds characteristics of the less-developed destinations of Mexico.

Cozumel Island has high natural richness and biodiversity. Important organisms include a wide variety of coral reefs, fish, and endemic terrestrial species such as the pygmy raccoon (*Procyon pygmaeus*) and Cozumelean coati mundi (*Nasua nelsoni*). Native tradition includes eating sea turtle eggs, a practice that threatens the species. However, uncontrolled tourism development in the island also threatens these species.

One threat posed by tourism is cruise ship visitation. As cruise ship visitation has increased, a number of “adventure activities” have arisen to serve the cruise ship passengers. These range from four-wheel jeep tours to horseback rides to dune buggies rentals. Almost all of these activities are concentrated on the less developed eastern side of the island. As a result, increased ecological impacts such as erosion from jeeps and dune buggies are becoming obvious along the beaches and roadside. There is concern about impacts on sea turtle reproduction from dune buggy and vehicle damage to the limited nesting area. Hurricanes Emily and Wilma caused massive damage to the beaches on the east side of the island, thus restricting the space available for mature females to lay eggs. Currently development on the east side is limited due to the lack of electricity.

However, several sites have been developed to meet the needs of the cruise passengers for adventure and beach activities. Worldwide, the amount of oil being spilled each year from ships cleaning out storage tanks and flushing bilge water is more than from all accidental oil spills (Wall 2002). Ship water can mix with oils, cleaners, and other contaminants to form a complex wastewater harmful to the marine environment. Cruise ships dump about 20 million pounds of raw sewage into the world’s oceans every day (Honey 1999). Approximately 210,000 gallons of human waste can be generated from a single cruise ship in a week. Additionally, over 100,000 marine mammals and over 1 million shorebirds are estimated to die each year from ingestion and entanglement with plastic debris, some of it from cruise ships (Wall 2002).

Damage from Emily and Wilma to the International Pier has caused cruise boats to anchor off shore and move passengers with tender boats. This has increased activity over several areas of reef that were also severely damaged during the hurricanes.

The coral reef environment is also uniquely fragile. Worldwide, the coral reef ecosystem is in decline through coral bleaching, a process of unknown cause whereby the coral expels its typically symbiotic algae and turns white in color (Spalding *et al.* 2001).

Diving activities can also impact coral reefs. Only in recent years has

diving become a problem as new sites are discovered in Thailand, the Great Barrier Reef (Australia), Utila (Honduras), Maui (Hawaii), the Florida Keys, and Cozumel. Damage is typically through unintentional contact caused by buoyancy control problems, air bubbles, and fins stirring up sediment. When buoyancy is not meticulously controlled, divers sink and/or rise rapidly through the water, hitting a reef or stirring up large sediment as they hit the ocean floor. Air bubbles also have a surprising amount of force, causing reef damage when released rapidly and aimed in the wrong direction. Most damage to coral is not evident but has long-lasting effects (Mizallo *et al.* 2002).

If tourism continues to expand to the east side of Cozumel Island, application of minimal development tourism principles could reduce impacts. Ecotourism through lower-volume, higher-priced packages can still generate significant revenue. Package tours also increase chances that visitors are trained. Predictability of visits can also reduce stress on guides with multiple livelihoods. Open access tourism development through signed road, trail, and mooring development increases chances of damage through inexperienced divers. It can also reduce value of exclusive packaged tours (Honey 1999). Since most diving in Cozumel is associated with commercial dive operators and certified dive masters, training in reef protection and basic environmental interpretation principles for dive masters should allow them to better instruct their customers as to the value and fragility of the reef. This will hopefully encourage visitors to be better stewards of the resource they came to see.

Restricting access is a critical component of the ecotourism strategy. This can be a complex political process in Mexican marine tourism, as certain groups that are not necessarily tied to the local community can dominate access and maintain power. Government policy tends to favor traditional infrastructure development. Building local capacity of non-governmental organizations can be a successful strategy (Young 1999).

#### *El Cielo Biosphere Reserve, Sierra Madre Oriental, Tamaulipas, Mexico*

El Cielo Biosphere Reserve is a unique, 144,530-hectare (356,442-acre) site located in the southwestern part of the state of Tamaulipas, Mexico. In 1985, the reserve was established by the Secretariat of Social Development (SEDESOL) in Tamaulipas, within the Sierra Madre Oriental. It was given additional official status by the United Nations in 1987 under the Man and the Biosphere Program (MAB) (Walker 1997). This site expresses some of the greatest biodiversity in the world, as it is situated on the climate transitional zone between North and Central America. The four distinct ecosystems present in the reserve include tropical jungle, mountain forest, pine-oak forest, and dwarf oak and heath forest (Araujo 1994).

Gomez Farías is the gateway community upon entry into El Cielo Biosphere Preserve. This village consists of 889 inhabitants and is supported economically by two primary industries, agriculture and tourism. This

community offers travelers a wide array of services, such as transportation from Gomez Farías to other remote villages, a variety of accommodations, authentic restaurants, and other needed supplies. However, urban proprietors own many of the current businesses, and there are plans to implement future establishments that will also be owned by non-residents of El Cielo. There are no fuel stations in Gomez Farías or in any other community within the Biosphere Reserve. This community is a site that may be considered an attraction for a diversity of visitors.

The community of Alta Cima is a remote village with a population of 135. The primary industry in the area is palm harvesting. However, tourism is now playing a larger role in the economic impacts in the area. This village is considered as a pass-through community for many El Cielo visitors that are in route to the more remote villages located at the higher elevations. There is a minimal fee or toll for visitors passing through Alta Cima to the more remote villages. Because transportation services must compete with the better-established services from Gomez Farías, this toll is one of the ways that this community can benefit from tourism in the region.

This community provides simple yet comfortable accommodations and also professional guide services. Alta Cima also acts as a research station for both national and international researchers. The site provides the widest array of ecotourism offerings within El Cielo Biosphere Reserve. There are several successful cooperatives in the village that are supported by the local NGO, ProNatura. One such cooperative example, Tienda La Fe, is a women's co-op that offers local artisan products such as homemade wines, jellies, deadwood carvings, hand-embroidered materials and other local arts.

Another example is Hotel El Pino, which is a men's co-op that is managed by 14 individuals. The participants work together in hotel management and offering professional guide services to the visitors. Community members work together in decision-making processes and some proceeds from these cooperative efforts are returned to the village for assistance with needed infrastructure and services.

A study conducted by Walker (1997) revealed that 70% of the visitors to El Cielo were Mexican, 25% were from the U.S. and the remaining visitors were from eight other countries. Many of the visitors (60%) had never before visited El Cielo while 40% of the visitors reported previous visits. An alternate survey at the Canindo Research Station reported 90% Mexican and 10% foreign tourists.

Visitor services have remained low as tourism increased over the past twenty years. Visitors reported the need for more trails, signage, increased guide training, and general information. Suggested improvements were increased knowledge of natural resources, improved professionalism, and more visitor involvement in programs (Walker 1997). A visitor center could promote the area through a website, provide on-site information, and act as a central clearinghouse for conservation and related education.

These results indicate a need to expand the existing market to more foreign visitors that are interested in the conservation and preservation of the natural resources in existence in the Biosphere Reserve. Due to the lack of infrastructure in El Cielo, alternative types of travel, such as guided package tours may be more appropriate for the visitor, the community and the Biosphere Reserve.

Provision of package tours could assist in the significant reduction of environmental impacts to the region through the use of monitoring and management of visitor accommodations, solid waste disposal, and sewage treatment in and around fragile ecosystems. Applied management strategies that employ containment of visitor use and visitor impacts in these sensitive areas could be implemented to ensure quality in the design of sustainable tourism development.

Through the implementation of package tours, tour operators could utilize the knowledge and talents of local individuals. Collaboration between package tour operators and community tour guides and representatives would allow eco-visitors to experience detailed nuances of communities and environments that otherwise may not be expressed without the personal touch and benefit of seeing the Reserve through the eyes of locals.

Exchanges between locals, tour operators and eco-tourists would be advantageous to the various communities through economic development and environmental improvements. This can be supported by the tour company through financial aid to support community projects and environmental monitoring to maintain ecosystems not overburdened by uncontrolled tourism.

*Rio Gavilan, Sierra Madre Occidental, Chihuahua, Mexico*

The Rio Gavilan is located in the Sierra Madre Occidental, just west of the continental divide. It is approximately equidistant (200 miles/320 kilometers) from Tucson, Arizona and El Paso, Texas and fifty miles (80km) west of Nuevo Casas Grandes, Chihuahua. The river flows north then west into the Rio Bavispe. The site has significance in the history of natural resource conservation. During 1936-38 visits, renowned conservationist Aldo Leopold thought it was the best picture of land health he had seen. The visits influenced Leopold's concepts of land health and the land ethic, most famously professed in his conservation classic *A Sand County Almanac* (Forbes 2004).

Naturally frequent fire regimes mixed with historical predator-prey relationships (wolf-cougar-deer) in an oak-pine setting that supported native trout. Leopold noted the lack of logging and grazing, but found agricultural check dams on most every tributary, created by the twelfth century Paquime. Leopold mentioned in later writings that, prior to visiting the Sierra Madre, he "had seen only sick land, whereas here was a biota still in perfect aboriginal health (Forbes 2004).

Despite logging and grazing since Leopold's 1936-1938 visits, the Rio Gavilan is still a very remote mountain locale. The 80km route from Casas

Grandes takes three hours. Most roads require high clearance and only a few mountain hamlets such as Mesa Tres Rios, Garcia, and Pacheco ring the 600 square mile (1500 sq. km) watershed. Descendants of Mormon colonists who guided Leopold still take occasional visitors into Rio Gavilan country today" (Forbes 2004).

Citizen surveys by both Garcia *et al.* (1994) and Forbes (2004) indicate locals are interested in diversifying their forest and ranching-based economy. Ecotourism could capitalize on local ties to conservation history. Low-volume, high-value package tours can have a larger relative economic effect on the small hamlets than the larger foothill communities. Private ranches offer opportunity to control access and ownership while employing ejiditarios (community members) from the hamlets. Tourism ownership and expertise can then spread to the ejidos through microlending and training (Forbes 2004).

As with the east side of Cozumel Island and El Cielo Biosphere Reserve, the Rio Gavilan can be marketed using its remoteness as an attraction. Numerous forks in the access road are unsigned, which makes random access by travelers difficult. Home stays at log cabin ranch houses or tent camping at Leopold's campsites offer a "step back in time" that is truly unique to North American, European, or even Mexican visitors. Traditional government policy promotes paving of the mountainous access road, although this has not occurred after numerous proposals over the past two decades.

## Differences as Opportunities in Nature Tourism

### *Nature Tourism and Ecotourism*

Nature tourism is any tourism related to nature, while ecotourism distinctly benefits local communities and conservation (Honey 1999). Ceballos Lascurain (1994) estimates that only five percent of conventional tourism in Mexico is ecotourism.

Mexico can benefit by following the lead of Costa Rica, whose tourism identity is aligned with various forms of ecotourism. While Costa Rica does not have perfect implementation of ecotourism, its image helps build capital to reinforce environmental protection and innovation (Honey 1999). Political climate helps support ecotourism (Young 1999). Costa Rica is the oldest and most stable democracy in Latin America. With its educational tradition and health care, Costa Rica has the highest United Nations Human Development Index among developing nations.

### *Opportunities*

Limited infrastructure development is critical to maintain remote appeal, but quality itinerary design can also be crucial. Mexico is a popular international vacation destination, which can be credited to a wide variety of experiences to be had from nature tourism, as well as a culture rich in a blend of Spanish and indigenous language, food, and customs. The successful holiday focuses on a

blend of cultural, historical, and nature tourism while being eco-friendly at the same time. The trip can, if need be, require one to be physically fit and healthy due to frequent walking, hiking, bicycling, and other challenging activities. Opportunities also exist to involve existing communities, not necessarily build new ones, to make sure that locals are getting hired over a person who is not from the area, to see locals in management positions, and to tap into local artists.

Traditional road and trail development and improvement needs reconsideration to preserve unique habitats and their associated marketability. Renowned conservationist Aldo Leopold (1949, 1966), whose son Starker Leopold (1959) wrote a key book on Mexican wildlife, notes in his famous land ethic a phrase that could apply to tourism development anywhere: "We are remodeling...with a steam shovel, and we are proud of our yardage. We shall hardly relinquish the shovel, which after all has many good points, but we are in need of gentler and more objective criteria for its successful use."

Leopold ends what some call the "bible" of conservation, *A Sand County Almanac*, with the following sentence: "Recreational development is a job not (simply) of building roads into lovely country, but of building receptivity into the still unlovely human mind."

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## Ecotourism Promotion in East Texas: Changing Perceptions of the Piney Woods

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### *Introduction*

East Texas is often perceived as an extension of the rural South into Texas, its “Piney Woods” contrasting with the more wide open terrain many equate with the state of Texas. The economy of East Texas, situated northeast of Houston and southeast of Dallas, has been dependent on oil and gas, timber, and diversified farming within the former southern Cotton Belt. Forest recreation has centered on hunting, fishing, and lake recreation. Rural parts of the region are economically depressed and include some of the poorest counties in Texas, some of which are losing population.

Yet potential for change exists. An industry overlooked for decades now is nature tourism, including its more strictly defined subcategory of ecotourism. This paper outlines potential for new ecotourism destinations and inclusion of ecotourism concepts within the framework of more traditional heritage and nature tourism in East Texas. Topics include benefit to local communities and conservation, respect for local cultures, travel to minimally-developed natural areas, and increased environmental awareness.

### East Texas

#### *Perceptions of East Texas as a region*

East Texas, like much of Texas, was settled primarily by Southerners. Today East Texas retains a Southern (cultural) flair more than any other part of the state. East Texas is also home to the state’s “Piney Woods.” But, like most regions, East Texas is a synergy of more than two characteristics. When asked what makes East Texas unique, local permanent and temporary residents (i.e., those most knowledgeable of the region) most frequently mention the “Piney

Woods,” but they also mention that it is hot, scenic or beautiful, predominantly rural (thus excluding Houston or Dallas), that East Texans are friendly and conservative, and that there is a laid-back, or relaxed, atmosphere. If any one aspect symbolized the region for them, however, it is not cultural, it is environmental – the “Piney Woods.”

Where is East Texas centered in most people’s minds? A survey of both business names and local residents indicates the twin centers of the region are near the Lufkin-Nacogdoches area and the Tyler and Longview areas. Survey respondents indicate the “heart” of the region is comprised of Nacogdoches, Angelina, Shelby, San Augustine, and Sabine counties, an area also known as “Deep East Texas.” Twenty-two counties make up what most define as East Texas. The combination of the friendly, relaxed atmosphere with scenic natural settings indicates potential for tourism.

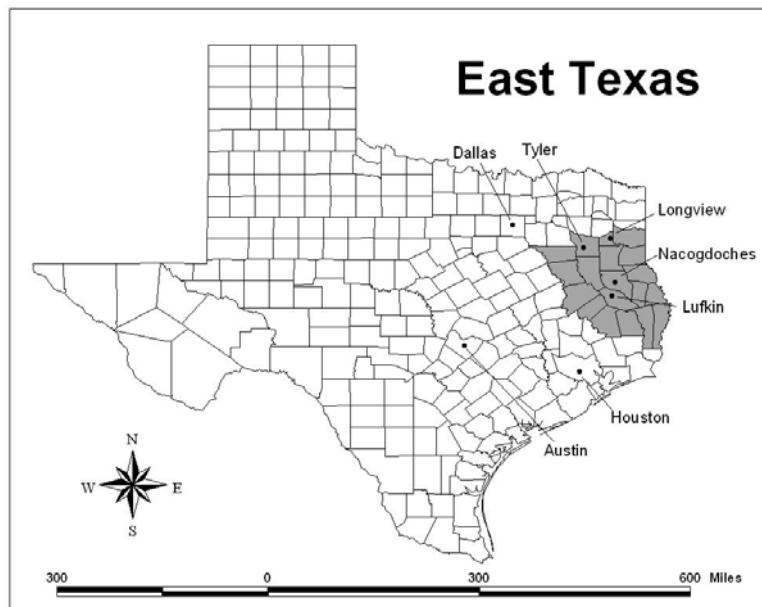


Figure 1. East Texas

#### *Economic geography of East Texas*

Eight of twenty-two East Texas counties lie in the highest state category for number of families below the poverty line (Texas State Data Center and Office of the State Demographer 2004). Yet the economy is changing and diversifying. Large forestry firms, although still in operation, are selling off more and more land. High natural gas prices have stimulated more natural gas well drilling. Most oil wells have been located and tapped for decades (including the famous Spindle Top near Beaumont), yet new technology brings reworking of some wells through horizontal drilling.

Moderately sized cities have attracted footloose industries such as call centers or become remote “exurbs” for Houston or Dallas. Tourism offers an

economic opportunity. East Texas is relatively close to population centers of Dallas, Houston, and Shreveport, Louisiana. Diversification of tourism follows a trend in US rural economic development (Freshwater 2000). Travel destination spending in East Texas totaled over \$1.7 billion in 2004 (Office of the Governor Economic Development and Tourism 2006)

### New Perceptions through Ecotourism

#### *Nature Tourism and Ecotourism*

Nature tourism should not be confused with its more strictly defined subset of ecotourism. Nature tourism is generally any tourism related to nature. This can range from nature-oriented theme parks to boat tours on scenic lakes to sport fishing or hunting. Nature tourism can include similar aspects of mass tourism, including bus tours, drive-through travelers, and operation of tours and lodging by franchises with remote central offices. Nature tourism and heritage tourism are two of the fastest-growing areas in the travel industry, the world's largest employer among economic sectors (Honey 1998).

Ecotourism has over one hundred sets of criteria, yet it can be most clearly defined by its primary professional society, The International Ecotourism Society. Executive Director Martha Honey (1998) notes that ecotourism uniquely emphasizes a direct financial benefit to local communities and conservation, respects local culture, supports human rights at its destinations, involves travel to largely pristine, minimally-developed natural areas, and increases environmental awareness. Nature tourism may include these concerns, but ecotourism increases their relative emphasis as key criteria.

Ecotourism typically emphasizes lower visitor numbers and higher-priced packages than mass tourism, to reduce impacts while still generating sufficient revenue. Local ownership is also typically a focus of ecotourism ventures. Given its ambitious criteria, all aspects of ecotourism are seldom implemented within a single project. Its criteria can be used separately, for instance, in efforts to increase the sensitivity of existing mass tourism facilities (Honey 1998). East Texas includes opportunities for nature tourism development that hopefully incorporate some of the goals of ecotourism.

#### *Interpretation opportunities in East Texas*

Nature and heritage tourism development can be enhanced by environmental education (Ham and Weiler 2002, Honey 1998, Kohl 2002, Wearing and Neil 2000). This not only develops environmental awareness, a goal of ecotourism, but education programs can increase local revenue by inducing travelers to visit or stay longer. Due to the region's focus on hunting, fishing, and camping, relatively few East Texas recreation sites include environmental education or nature interpretation.

Nature interpretation, like ecotourism, can be held to higher standards. The National Park Service Interpretive Development Program is one example. The program emphasizes two premises, visitor sovereignty and universal

concepts (NPS 2000). Interpretation is not necessary to “educate” visitors what to believe. Instead, interpreters should create varied opportunities for visitor to “forge their own connections” with meanings and significance inherent in the resources. In this way, it is hoped East Texas visitors will have higher potential to respect local culture and environment.

#### *Interpretation at the Texas Freshwater Fisheries Center*

The Texas Freshwater Fisheries Center (TFFC) houses a hatchery, laboratory, aquarium, and education center focusing on underwater wildlife in the state’s freshwater streams, ponds and lakes. Annual visitation exceeds 60,000, and one-third of the visitors participate via curriculum-based educational groups. The City of Athens donated \$4,063,000 for TFFC establishment, the largest gift ever made to a Texas conservation project. Additional support came from the ShareLunker Foundation, Athens Municipal Water Authority, Athens Economic Development Commission, and a number of private corporations. Athens residents are proud of the facilities and have high expectations.

Several special events, such as the Fourth of July and Halloween, are held specifically for Athens residents. TFFC currently partners with Stephen F. Austin State University to implement a Comprehensive Interpretive Plan to help visitors form connections to site resources. Visitor surveys are being conducted. Potential obstacles for implementing this plan are interpretive skills and a lack of time for busy staff.

Ecotourism proponents could argue some Center activities are “unnatural” due to inclusion of introduced species, genetic testing for increased fish production, and during the high visitation season, visitors can slightly damage facilities and disturb some aquatic creatures. Interpretive programs could emphasize native fisheries as a universal concept, balancing this concern with sovereignty of visitors to form their own connections.

#### *Texas Forest Trail*

The Texas Forest Trail is one of ten scenic driving trails created in 1968 by then Governor John Connally and the Texas Highway Department to showcase distinct regions of Texas. The Texas Historical Commission (THC) incorporated these trails into the newly created Texas Heritage Trail Program in 1997. This program fosters preservation and economic development by encouraging communities, especially rural ones, to work together to promote a region’s historic and cultural resources, which in many cases go hand and hand with natural resources.

The interaction between these resources can be seen within the Texas Forest Trail Region, where historical sites are often based on natural resources. The Texas Forestry Museum in Lufkin frequently promotes outdoor exploration of East Texas forests. The cities of Jefferson and Marshall were established due to late 1800s steamboat commerce near Caddo Lake. Tourists can experience this history by riding the Graceful Ghost, a restored steamboat that tours the lake.

The Texas Forest Trail Region also promotes four National Forests, five State Forests, eighteen State Parks, and numerous other sites.

#### *Interpretation and marketing for Hispanics*

Texas is projected to become half Hispanic by 2050 (US Census 2000). Although the population of Nacogdoches County was under fifteen percent Hispanic in 1999 (Texas State Data Center and Office of the State Demographer 2004), the Nacogdoches school district currently has over thirty percent Hispanic enrollment (NISD 2006). Recent studies have helped dispell the popular belief that this ethnic segment is neither aware nor concerned about natural resource conservation (Chavez 1991, Kerr 2005).

Provision of appropriate activities, facilities and services developed for large extended families, along with verbal communication in Spanish at community events, may assist in building a strong constituency among the Hispanic public. Programs should be designed for large, extended family groups and should be conducted at a third-grade to fifth-grade level to reach the majority of the extended family group. Informational signage and brochures that exhibit colorful and attractive messages in Spanish should be available to Hispanic communities and site visitors (Kerr 2005). Mission Tejas and Nacogdoches, the oldest town in Texas, both have strong links to Spanish history.

#### *Rare habitats and species*

Ecotourism can be both detrimental (Isaacs 1998) and instrumental (Honey 1998) in protecting habitat. Therefore, careful implementation is necessary. Visitors can participate in monitoring, restoring, and learning about rare habitats and species in projects similar to those organized by Earthwatch, a non-profit group offering high-priced scientific research trips. Trip surcharges (one to five percent) can also be used to provide direct financial benefit to local conservation programs.

Longleaf pine is a slow-growing pine species replaced with faster-growing species throughout its range in the southeastern US. Longleaf pine forest and its associated species, including the endangered red-cockaded woodpecker, have had their habitat reduced to less than three percent of its historic range (Longleaf Alliance 2002).

Several unique stands of longleaf pine forest in varying condition remain in East Texas at Boykin Springs, Upland Island Wilderness, Catahoula Preserve, and the Big Thicket National Preserve. Most of these stands require regular brush removal and/or light prescribed fire to restore or maintain conditions (Longleaf Alliance 2002).

Bottomland forests can be seen as the “rainforests” of East Texas, providing some of the highest biodiversity in the state. As an example, they can harbor up to 278 bird species – 101 of which breed mostly in the river forests.

Wintering populations can exceed 2,000 birds per square mile (Parvin 1986). Bottomland forests are reduced to approximately one-third of their historic range through clearing for agriculture, flooding for reservoirs, and urban development. Those acres remaining are often reduced in quality by removal of mast (nut) producing tree species and fragmentation of habitat blocks and corridors (Kellison and Young 1997, McMahan and Frye 1986).

Big Thicket National Preserve was established in 1974 to protect the rich biological diversity of lower East Texas. It represents a convergence of three major ecosystems, eastern hardwood forests, the Gulf Coast plain, and Midwest prairies. The Preserve is a UN International Biosphere Reserve and Globally Important Bird Area (National Park Service 2006). Prior to its recent sighting in Arkansas, the mystical ivory-billed woodpecker was last recorded in the 1950s in the Big Thicket's bottomland hardwood forests. Renewed searches for its presence in Texas are underway.

East Texas also has increasingly frequent sightings of the Louisiana black bear, a federally threatened sub-species of black bear. Potential research includes evaluation of habitat distribution, habitat restoration, and determining black bear survivability and reproductive capacity in East Texas (Texas Parks and Wildlife Department 2005).

The bats of folk legend have scared many and inspired others to seek them out. Legends may live on forever, but rare species do not always succeed. There are many bat species in Eastern Texas, but two are rare: *Myotis austroriparius* (southeastern myotis) and *Corynorhinus rafinesquii* (Rafinesque's big-eared bat). Congress Avenue Bridge, farther west in Austin, Texas, hosts a colony of up to 1.5 million Mexican free-tailed bats (BCI 2006). Tourism surrounding the Austin bats has been instrumental in preservation of their habitat. East Texas does not contain such spectacularly large colonies.

The Rafinesque's big-eared bat depends on bottomland hardwood forests and is easily disturbed by visitors. Tourism would have to be carefully controlled to view the bats from a distance. Such tourism could be aligned with other wildlife tourism. Due to the bats' elusive nature, those that study them find delight in uncommon sightings. Through teaching local communities and visitors to embrace these little "ambassadors of the night" and not fear them, the East Texas region can also help conserve bat species.

#### *Neches River*

The Neches River is the longest (mostly) free-flowing river in East Texas and provides most of the region's critical bottomland hardwood forest. The lower reaches are popular for canoeing while the middle and upper reaches, surrounded by prime habitat on private land, offer potential for further guided trips by watercraft. Securing private land access, perhaps through camping or access fees, would allow shorter trips (Texas Parks and Wildlife 2005). The prime wildlife and recreational habitat is at constant risk of flooding by dams proposed by urban developers and their pressure on state water politics.

### *Caddo Lake*

One of the prime natural destinations in East Texas is the state's only natural lake. Caddo Lake has official Ramsar designation as an internationally important wetland. Caddo Lake provides habitat for fifty mammal species, fifty-three reptile species, seventeen turtle species, and roughly half of the state's sixty-three amphibian species.

John Winn offers tours to secluded parts of Caddo Lake with small groups on his 18-foot tour boat, which can make its way over fallen logs or plow through aquatic vegetation. Winn makes his small tours personal, adding mystery through sundown tours of Caddo's backwaters, complete with sounds of tree frogs and hoots of owls.

Johnny Nance conducts tours of Big Cypress Bayou, which feeds Caddo Lake. "Ecotourism is what we want and wish to promote," states Mr. Nance. He notes how sometimes small damage cannot be helped, such as gradual erosion of the shores when his tour boats go by. Nance tries to limit damage by using only one tour boat with a four stroke motor and touring at full passenger capacity, if possible (Nance 2006).

Mr. Nance also asks for local assistance to keep vegetation from clogging the bayou, which disturbs the oxygen balance. Trash, sewage from old septic systems, and fertilizers seep into the waters. The state is helping fund better sewage systems for the poor and local groups meet to pinpoint problems and work out solutions (Nance 2006).

### *Conclusion*

East Texas is perceived as a friendly, scenic region infused with both Southern charm and a forested landscape unique to Texas. Much of its tourism has been centered on traditional outdoor hunting, fishing, and camping and heritage resources. Completely changing visitors' perceptions of a region is a difficult marketing strategy. Yet East Texas can capitalize on its recognized natural assets through sensitive expansion of interpretive programs, development of low-volume, higher-priced package tours, and business start-up and retention programs for new nature tourism ventures. Such work can build on existing perceptions to sustain resources unique to Texas and the world.

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## Collecting Paper and Reducing its Consumption: an educational experience in a small Mexican University


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### Abstract

**During the nineties, the annual rate of deforestation officially recognized in Mexico was 600,000 hectares. By the end of 2001, the head of the Environment and Natural Resources Ministry, declared that the real rate of annual deforestation amounts to 1,127,845 hectares. The increasing pulp national demand for paper production has been satisfied by importing raw material from abroad and at the expense of destroying the natural forests. The huge environmental costs involved in such destruction heavily compromise our future.** On the other hand, in many universities we are still reproducing the same fragmented vision that is responsible for environmental deprivation. What is the purpose of lecturing undergraduate students on sustainability, if we continue with our daily polluting and misspending practices?

**An inner urge to be coherent is our point of departure.**  Therefore, we implemented a program for collecting paper and reducing its consumption. It was initiated three years ago in the University Center of La Cienega, La Barca Campus. Four hundred students, attend this Campus which area of influence extends to 40 km. At present we have accumulated 7 tons, which indirectly implies that we have saved the life of 84 full grown trees, and we have also saved 196,000 liters of water and 11,500 Kw /hour of energy. Since 2002, we have encouraged several educational and governmental institutions of the surroundings to establish their own paper collecting centers. This re-educational strategy based on the principle, "If I change, the world changes", is the core of this paper.

*No one commits a greater error than he who does nothing,  
thinking that alone, he can do very little*

Edmund Burke

In the face of environmental problems, the approach that has generally prevailed in institutions of higher education has been to include subjects related to these topics in the curriculum of some academic majors. On many occasions, the contents of these courses on Ecology and Environment contradict those of other subjects, which transmit non-sustainable knowledge and practices that the students will apply in their professional life. Therein lies the first contradiction.

The second one, which is no less disturbing, has to do with the lack of consistency between what we “preach” in the classrooms and what we do in our daily university life. The profligate waste of resources, the use of highly polluting products, the generation of wastes whose handling and disposal turns them finally into trash, are just a few examples of this inconsistency.

The third contradiction refers to generating knowledge that serves to understand environmental issues more thoroughly and that contributes to solutions. However we must face up to the obvious, disturbing question: What moral authority can we members of the university muster to demand that government officials, industrial manufacturers or agricultural producers meet their responsibilities, if we fail to implement measures to conserve our natural resources and energy, if we refuse to modify our own wasteful and polluting habits?

The urgent need to establish a coherent relationship between what we know, what we say, and what we do, and the ethical imperative to take responsibility for our actions, has led us to propose the Program for Collecting and Reducing the Consumption of Paper (PAP, in its initials in Spanish), as the first phase of an overall program to get the university to adopt sustainable practices in all its activities. The program was started in the year 2001 at the La Barca Campus of the La Cienega University Center, a regional branch of the University of Guadalajara. This Campus is surrounded by grain fields and a guava orchard. Four hundred students, coming from towns located within a radius of 40 kilometers, come to the Campus every day. The research that we have undertaken and the experience we have acquired are the key aspects of this article.

This paper is divided into two parts. In the first, we lay out the problem of the destruction of the natural forests and the government’s proposals to control this destruction. The data presented have been taken mainly from newspaper

articles, and because of this there are discrepancies in some of the figures. We make no pretense here of offering rigorous research data; nevertheless, these “clippings” offer an overview of the ongoing devastation. In addition, we present a series of deeper reflections having to do with our fragmented perception of reality.

In the second part, we share with the reader some of our experiences since the inception of PAP at the La Barca Campus, as well as at other educational institutions and government offices that we have invited to join our project.

## **Overview of the Destruction of the Natural Forests**

An chronicle of our tragedies

The deterioration and destruction of natural forests around the world and in Mexico have reached alarming levels.

- “Each year 17 million hectares of the world's forests disappear, the equivalent to half the surface area of Finland.” [1]
- In the presentation of the 2001 Report on the Situation of the Forests in the World, the Food and Agriculture Organization of the UN indicated that Mexico ranks among the top 8 countries of the planet in terms of the destruction of naturally forested surface area in the 1990’s. During this period, 631,000 hectares of forest disappeared from Mexican territory each year ...Only 2.5 million hectares are protected reserves, which represents barely 4% of the total area of forests....[2]
- “Half of the world’s tropical forests have been lost from 1990 to the present. The destruction is concentrated in Bolivia, Brazil, Indonesia, Malaysia, Mexico, Venezuela and Zaire.” [3]
- According to figures from the University of Guadalajara, in the state of Jalisco, 74 thousand hectares of pine-oak, upland mesophyte and lowland deciduous jungle forests are deforested annually. [4]

Towards the end of the year 2001, a note appeared in the press in which the real figures about the country’s deforestation were published, almost doubling the figures officially recognized by the federal agencies of previous administrations. The former Secretary of the SEMARNAT (Environment and Natural Resources Ministry), Victor Lichtinger, presented the preliminary results of the National Forest Inventory 2000. This study started up during the previous administration, and various governmental and academic institutions took part in it, comparing satellite images of national territory from 1993 and 2000. “For years environmental policies were based on the assumption that Mexico had an annual

deforestation rate of 600 thousand hectares. The reality, however, is that 1,127,845 hectares of forest have been cut down each year." [5]

### Causes of deforestation

The causes of such destruction are many: the growing demand for wood for paper production and other uses; the expansion of agricultural, livestock, and urban land; the building of roads, dams, etc. Other causes are forest fires and the public sector's scarce resources to combat them, clandestine logging, authorized logging, government corruption, and, in general, forest policies and the public-sector farming and livestock policies that have worked against the conservation of these resources. Various government officials have acknowledged these last causes:

- In a report presented at the beginning of 2001 by the State of Jalisco delegation of the Federal Attorney's Office of Environmental Protection (PROFEPA, in its initials in Spanish), as part of the National Forest and Water Crusade, it was acknowledged for the first time that the damages caused to the forests are due more to authorized logging than to clandestine logging. [6]
- The previous secretary of the SEMARNAT, Victor Lichtinger, accused groups of organized crime of exploiting forests and jungles to obtain extraordinary profits. He stated that half of the annual national production of wood is illegal. [7]
- Victor Lichtinger also declared that the critical situation of the country's forests was caused by public policies. He pointed the finger at Procampo, a federal government program in effect since 1993, that he claims encourages farmers to clear tracts of the country's forests and jungles for agricultural purposes. [8]

Another reason that explains such devastation has to do with the imbalance that exists in the ecosystems and with the "restoration" measures implemented by the authorities, which usually interfere with the processes of nature. On the other hand, as forests have been logged, the pasturing zones of private herds have grown. Because of this a direct correlation has existed among loggers, cattle raisers and local authorities. [9]. Nevertheless, another type of complicity has begun to appear on the horizon: loggers-drug traffickers-local authorities.

Due to the fact that the cocaine transportation networks from Colombia have been dismantled in Mexico, the big drug cartels have fragmented and the production of three types of drugs has increased: marihuana, heroin and metamphetamines. The first two require the control of land in complicity with local authorities that offer them protection for the conservation of fields for planting. [10] Similarly, although referring to Jalisco, Agustin del Castillo made

the following accusation: "Disorder is spreading in the Northern region of Jalisco. The clandestine loggers, in association with illegal hunters and drug traffickers, act with impunity and shoot at the legitimate land owners to drive them off...In the region of the volcanoes, at night they plunder forests and cultivate drugs." [11]

## Consequences

As trees are renewable resources, it is difficult for us to see that when the natural forests are lost, the flora and the fauna associated with them also disappear. Besides, soil without vegetation cover easily loses the organic matter that makes it fertile and retains moisture, and when it is left exposed, wind and rain sweep it away. Along with the decrease in the production of oxygen, precipitation is reduced and with it the infiltration of water into the subsoil, the process that recharges aquifers. The forest is a concert of life, an intricate system of micro and macroscopic living beings that interact among themselves and with the environment they inhabit. For these reasons, its destruction is intimately related to the erosion of soil, the shortage of water and the loss of biodiversity.

- Victor Lichtinger stated that "all of the upper part of the mountains and the mountainsides are being deforested, and this is leaving to country without water because it is evaporating, the soil erodes and the groundwater cannot be trapped in the subsoil. He recalled that in April of 2001, President Vicente Fox launched the Forest and Water Crusade and considered both to be issues of national security. [12]
- The same secretary declared ..."we are destroying Mexico's potential, since we are not only eliminating the trees, but also with the possibility to capture carbon and water." [13]

## Proposals to Stop the Destruction




Reforestation programs are not a panacea

As the trees are renewable resources, we think that reforestation programs undertaken by the public administration or by ecologists will be sufficient. We suppose that when we cut down one tree, we will mend the damage done by planting another. Nevertheless, the rate of survival of the trees planted is less than 20%, i.e., for each 100 trees planted, fewer than 20 survive. Despite the fact that in the National Reforestation Program 1995-2000 the objective was set to reach an 80% survival rate, the results were poor. During this 6-year period, a hundred million trees were planted in Jalisco. More than a hundred million pesos were invested in the program and the results are scanty; for the most part what they have achieved are plant cemeteries. [14] Applying the estimated rate

of survival, only 20 million trees survive. According to the statistics of the SEMARNAT, from 1995 to 2000, forest fires in Jalisco consumed 70,900 hectares of forest. [15]. In order to give an approximate idea of the number of trees lost, let us assume that 100 individual trees grow on an average hectare, so that roughly speaking 7 million were destroyed by fire.

In Jalisco 74,000 hectares of woodland are logged annually [16], which multiplied by 6 years (the period analyzed), gives as a result 444,000 hectares. To this we add the 70,900 hectares consumed by fire, which gives a total of 514,900 hectares erased from the territory of Jalisco from 1995 to 2000. If we multiply this surface by the number of trees estimated per hectare (100), we obtain the figure of 51,490,000 individual trees lost. Upon comparing this figure with the 20 million new trees that subsist, we find that the rate of destruction of these natural “renewable” resources is much greater than the rate of their replacement. Even if we consider a forest to be no more than an assembly of trees, the future we are looking at is somber indeed. (See Table I)

Table I A comparison between the number of trees planted and the number of trees lost in the State of Jalisco, 1995 - 2000

Gains	Losses
The National Program of Reforestation planted in Jalisco during this 6 year period:	
: 100 million trees	Logging : 74, 000 has./year x 6 = 444, 000 ha.
rate of survival 20 %	Fires in these 6 years = 70, 900 ha.
100,000 000 X 20% =	Total = 514, 900 ha.
20, 000 000 new trees	Approx. Estimation: 100 trees per ha. = 51, 490 000 trees lost

Strategic Forest Plan 2000 - 2025

“The destruction of the Mexican forests continues in free-fall mode,” indicates the study done by consultants of the government of Finland for the Mexican government. In the most optimistic of the scenarios, the rate of deforestation will be reduced by 40%, i.e., from almost 600 thousand hectares per year, to an annual average of 340 thousand within a time limit of 25 years. This goal has been set in the Strategic Forest Plan for Mexico, drawn up by the Finnish experts. In this



way, the country will only lose 8.5 million hectares of woodland in that lapse of time, a surface area slightly larger than the state of Jalisco. [17]

It should be pointed out that this plan is based on the official figure of 600 thousand hectares annually, although the real annual rate of deforestation is 1,127,845 hectares. Consequently, bringing down the real rate of deforestation by 40% means saving 451,000 hectares from the loggers, not the 260,000 proposed (600,000 – 340,000).

#### Environmental Intelligence Unit

Given the armed bands of professionals that illegally exploit lumber resources, the Federal Attorney's Office of Environmental Protection (PROFEPA) has set in motion the Environmental Intelligence Unit, which coordinates efforts by the Department of National Defense, the Preventive Federal Police and the Federal Attorney General's Office. [18]

#### Creation of the National Forest Commission (CONAFOR)

This decentralized public agency forms part of the SEMARNAT. It was established during the present federal administration, and endowed with its own legal identity and resources. Its task consists of developing, favoring and prompting productive activities, conservation and restoration of forest resources, as well as participating in the formulation of plans, programs, and in the implementation of policies of sustainable forest development. [19]

#### A Deeper Reflection

##### On environmental policy

According to the former undersecretary of SEMARNAP (Department of the Environment, Natural Resources and Fishing) of the previous administration (1995-2000) -Victor Villalobos Arambula- the national demand for pulp has been met at the expense of destroying the natural forests of Mexico on the one hand, and by importing this commodity from other countries on the other. In this way, in 1998, 800 million dollars left the country. In the year 2000, for the purchase of wood for diverse uses, including wood for use in paper production, 2 billion dollars were spent on imports. [20]

In 2004, for the same purpose, 6.3 billion dollars were spent on imports, according to the secretary of the SEMARNAT, Alberto Cardenas. [21]

To these large quantities of money, the public resources used to counteract the situation must be added: reforestation programs, fire prevention and control,

purchases of equipment, the creation and operation of the CONAFOR, etc. The Strategic Forest Plan indicates that it is urgent to duplicate the total of resources earmarked for disaster prevention and response, i.e., increase the 85 million pesos that are spent at present, to 170 million. They also propose an investment plan of 12 billion pesos per year. [22]. Victor Lichtinger estimated in year 2001 that the proposal sent by the Executive to the Chamber of Representatives to allot 550 million pesos to CONAFOR is insufficient to revert the deforestation. He considers that ...“it is necessary to treble or even quadruple this budget.” [23]. Thus, “reducing by 40% the destruction of the forests” will cost Mexicans of today and tomorrow astronomical amounts of money, not to mention outlays in the neighborhood of billions of dollars each year to import wood and pulp.

From another perspective, economic calculations made by the INEGI (National Institute of Statistics, Geography and Data Processing) estimate that the loss of natural capital caused by damages to the environment equals 10.6% of the GNP each year. In contrast, the contribution of the forest sector doesn't even surpass 1% of the GNP, according to the document presented by the INEGI, National Accountability System of Mexico. [24]

The huge environmental costs implied in the devastation of these complex and magnificent ecosystems for the mere purpose of generating a few pesos, plus the annual expenditure of hundreds of millions of dollars on imports, plus the increase of the foreign debt which enables the government to carry out plans and forest programs that are by all accounts insufficient to revert the problem, serve to highlight the absurdity of the country's economic system.

Dr. Jose Saruhkan points out a flagrant contradiction: “Today, when we have less water per inhabitant and the volume of waste of the available liquid is difficult to quantify, more and more water factories close daily, due to the logging of the natural forests.” [25]. On the one hand we destroy the ‘water factories’; on the other, in the face of the growing water shortage, we require outrageous amounts of money to implement the National Hydraulic Plan. In order to implement the actions proposed by the National Water Commission in the above mentioned plan, 30 billion pesos will have to be invested every year from now to 2025, i.e., a total of 760 billion pesos, according to Cristobal Jaime Jaquez, director of the Commission. [26]

The main goal of the economic system is to generate economic growth, to increase the GNP. That explains why the impact of environmental policies is so limited, in spite of the authorities' good faith and effort; the fundamental reasons are right there, in the rationale of productive activities, in the economic model itself. Both follow a contradictory logic. For these reasons, as long as neither the government nor Mexican society in general reconcile the generation of wealth

with the conservation and sustainable use of natural resources, economic policies will continue being predatory and environmental policies will fall further and further behind as they try to mend, with little success, the environmental deterioration caused by economic activities, at a cost that absolutely overwhelms the profits generated by such activities.

The role that Mexican society plays in the convergence and integration of both policies is crucial, inasmuch as the livelihood of millions of citizens is decisive for this process. If the fundamental objective of the economic system is to produce more, then society's role is to consume more. For this purpose a gigantic publicity machine has been set up that insistently and with great persuasive power lectures us at all hours and in every corner of the country, until we begin to confuse a greater consumption of products with a better quality of life. This explains why the paper consumption per capita has increased and why the waste generated per inhabitant has trebled since the sixties. [26]. And it is precisely in the reduction of natural resources and energy consumption, as well as in the decrease of pollution generated per inhabitant, where all members of society can contribute in the immense endeavor of building a sustainable culture.

Natural forests are NOT renewable resources

Most of us conceive of forests as a mere grouping of trees. And since trees are renewable resources, we erroneously conclude that the forests are also renewable resources. Nevertheless, it is fundamental to make a distinction: a natural forest is not the same thing as a commercial tree plantation. While the latter is renewable, the former is not, at least it cannot be recovered in the span of a human life.

The other is always to blame

In general, as citizens we think that reforestation is the obligation of the public authorities. "Why me, if I have never cut down a tree?" we argue. We are far from realizing that our habits of consuming paper and then throwing it into the waste basket is directly correlated to the disappearance of the natural forests, to the extinction of animal and plant species, to the erosion of soil and to the shortage of water that we also are suffering. And how could we possibly know it, if paper is so cheap, and is sold around the corner!

"There's no money, so nothing can be done"

The argument that nothing can be done about this critical situation due to lack of economic resources, seems to be the common denominator that justifies paralysis and inaction, all the way from the individual up to the federal cabinet-level

departments. This underscores the enormous importance that we attribute to money, the omnipotent. We underestimate our own resources: creativity, intelligence, ingenuity, hands that work, social organization, knowledge, etc. We feel ourselves shackled and impotent, or we conveniently use that argument to wash our hands.

Program for Collecting and Reducing the Consumption of Paper (PAP, in its initials in Spanish)

For the dual purpose of annulling the divorce between what we preach in the classrooms and what we practice, and of helping to reconcile the contradictions between environmental and economic policies, we got PAP underway in the middle of 2001. The objectives of this program are as follows:

- To put into motion a participatory process in which all university members are involved: students, lecturers, professors, authorities, administrative and service personnel, for the purpose of bringing about a change of conscience and consequently, of conduct. In other words, to understand how our way of living accounts for environmental deterioration and to substitute our non-sustainable practices for sustainable ones, beginning with ourselves, with our own place of study.
- After sharing our knowledge, our experience and our example, to invite other educational institutions and government agencies to join their efforts with ours in order to work together on building a culture for life.

Advantages to recycling paper and cardboard

Millions of trees are cut daily in the world for the production of paper, when this can be recycled up to 10 times. [28]. The production of 1 ton of virgin paper requires the following: 12 trees that are more than 20 years old, that is to say, 3.8 m<sup>3</sup> of cellulose, 100,000 liters of water and 5000 Kw/hr of energy. [29]

To recycle a ton, not only are 12 trees saved from the saw, but 28,000 liters of water and 1650 Kw/h of energy are saved, i.e., water consumption is reduced by 28% and energy by 33%. [30]

In order to translate these large quantities into manageable figures, say we have a package of 500 sheets of white bond paper, letter size (known commercially as 75 gr/m<sup>2</sup>, 37 kilograms) It weighs 2 kilograms 300 grams, as one kilogram of paper equals 217 sheets. If we utilize the previously given data to do our calculations, then for the production of a kilogram of virgin paper, 100 liters of water and 5 Kw/hr of energy are needed. For the production of one kilogram of

recycled paper, 72 liters of water and 3.3 Kw/hr of energy are required. The small savings of cellulose, water and energy by each kilogram of paper multiplied by thousands of users can be translated into significant quantities.

Four hundred people report to the La Barca Campus daily. If we estimate that on the average we use 7 sheets daily per person, we have 2,800 sheets, which divided by 217 sheets per kilogram, gives us almost 13 kilograms. If with the cellulose of one tree 83 kilograms of paper are produced, then every week we roughly consume one tree that has taken more than 20 years to grow. Just to compensate for this consumption, we would have to plant 5 trees a week, considering that the survival rate is 20%.

### Strategies

1. Out of an inner urge for consistency in thought, word and deed, I began to reuse and to store paper, to collect boxes of cardboard and other empty packages. Along with the presentation on the destruction of forests, I invited students to join this modest effort. Apart from the endless job of classifying the material that we receive almost every day in the collection center, the students have figured out how to persuade classmates, teachers, friends, relatives and neighbors. They have visited banks, copy centers and some businesses in La Barca, Vista Hermosa, and Yurecuaro, for the purpose of collecting paper that otherwise would end up in the trash heap. Some have worked with me in the collection of data, in the creation of an informative brochure, in bulletin boards, and in a power point presentation.

We have visited more than forty educational institutions in Atotonilco, in the city of La Barca and its outskirts; in Cumuatillo and La Palma in Michoacan; in primary, secondary, technical and prep schools. We have given this talk in the Department of Habitat and Urban Development at ITESO, in the Rural District of Development 06 of the Department of Agriculture, Livestock and Fishing (SAGARPA, in its initials in Spanish), in the PROFEPA, in the Rural Office of the Jalisco Department of Development, in the city halls of La Barca, Sahuayo and Vista Hermosa. We have also presented it before the Commission of the Lake Chapala Basin, A. C. in Guadalajara and at the 5th Regional Ecology Symposium held in San Luis Soyatlan, Municipality of Tuxcueca, in March of 2002.

We have not always obtained a positive response. In some cases, we have not aroused students or civil servants from their lethargy. On other occasions the school or government authorities themselves have blocked the initiative of their subordinates. Nevertheless, at the collection center located on this Campus, we have received full truckloads of books, boxes of dead archives and obsolete advertising, from primary schools located in towns where we have never been,

or from public institutions that have become aware of our work through third persons, as in the case of the Federal Electoral Institute in La Barca, where a graduate of this university works.

2. As the next step in our strategy, we have presented the dramatic figures of destruction, what these imply and what we can do to contribute to the solution. We inform people that when we throw paper in the trash bin we contribute indirectly to the destruction of the forests, to water scarcity, to soil erosion, to the loss of biodiversity, to an increase in the external debt and to the loss of funds. And when we tell them that paper can be recycled up to ten times, they are shocked. It is, therefore, the conviction of each individual, their intrinsic motivation which is the motor of this process, not a regulation of an obligatory character, not extra points to a grade, not a short-lived campaign to win some competition.

3. The action that we propose does not require economic resources, although the classification of the material and its packing does imply work. Furthermore, it is a proposal within the reach of anyone whose awareness of the situation makes them willing to change their habits. The sum of these individual actions, of these “ant-scale” contributions, can make the difference.

### Savings and profits

From the middle of 2001 to august of 2004, we collected 7 tons of paper and cardboard in the collection center. This means that we saved the life of 84 adult trees, and we have also saved 196,000 liters of water and 11,500 Kw /hour of energy. This without taking into account that using the paper on both sides also saves trees, energy and water, in amounts difficult to quantify. Indirectly, we contribute our grain of sand to the conservation of the forests, and with it, we collaborate in the conservation of biodiversity, soils, water and energy from non-renewable sources, all of which form the basic natural capital for meeting the needs of present and future generations.

In order to replace those 84 trees, we would need to plant at least 420, because the survival rate is 20%, and we would have to wait 20 years for them to reach adult size. Consequently, it is a great deal wiser and cheaper to save the trees' lives than to reforest.

### Limits to program expansion

While the practice of saving paper has spread in the region, we have run into an obstacle. The middleman in La Barca, who buys paper and cardboard and sells it to recycling companies located in Guadalajara, cannot give service at the speed

required. We have heard of several schools that have called him repeatedly, and as he does not pass by to collect the material, they throw it in the trash bin because of the limited space available to them. Therefore, it is urgent to promote either the installation of a recycling company or a regional collection center capable of handling the demand.

### Other Proposals

The strategies used by the government to resolve the problem are mainly corrective; i.e., they try to restore through reforestation the trail of destruction that authorized or unauthorized loggers leave behind them. These strategies are very costly and long-term. Because of this, it would be much more efficient and less costly to suspend the licenses that already exist for the exploitation of the natural forests that still remain, than to invest millions and millions of pesos in planting trees, rehabilitating eroded soils, remedying the growing shortage of water, and trying "to recover" biodiversity, while all the time increasing the foreign debt, and selling the primary natural resources for the future development of the country at cut-rate prices on the international market.

Another proposal would be to allocate public resources and to direct investments of private capital, to commercial tree plantations and to wait the necessary time to be able "to harvest" wood. In the meantime, we would have to resort to importing wood and pulp, to looking at the possibility of other quick-growth vegetable fibers for paper production and to utilizing recycled and recyclable bond paper, preferably produced in Mexico. [31]

A "subversive" strategy for self-transformation; if I change the world changes

Our experience and many similar experiences that are taking place in other institutions and latitudes, reveal the great potential for change that exists when the individuals of a community act in concert. For this reason, we think that the subversive strategy subtitle is the most adequate one, because a community well-informed of what is happening and aware of how its way of living causes environmental deterioration, can raise against this ignorance, substituting its anti-life practices for others that seek to build a common future. This subverts the logic of the prevailing economic system that would equate quality of life and progress with the demented race to make more money in order to increase the consumption of goods and services, no matter what the cost.

By accepting that part of the blame lies in our own habits, and therefore that our habits have an influence on the solution, we recover hope, the power to decide and to act accordingly. Of course change starts with a few convinced individuals who modify their own habits and influences those around them. One drop joined

with another and another can precipitate a downpour, and diminish the pressure exerted by society upon the natural forests. These actions in conjunction with governmental programs can produce tangible results.

These simple actions also have another repercussion – more subtle but of great weight: that of perceiving that we are an integral part of nature and of humanity, of a group that is struggling to preserve the continuity of life, to contribute to the well-being of the people that now populate the globe and of the ones to come tomorrow. In this process, individual consciousness expands and it becomes one with others, and even with other forms of life. There is also a revaluing of what is human, in the sense of recognizing the legitimacy of human beings' aspiration to have a dignified existence, as well as to recognize their capacity to face adversity and come out ahead. In conclusion, from the small La Barca Campus, this is our contribution to the great process of building, shoulder to shoulder, a culture of life.

#### Endnotes

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## An Integrative Approach to Therapeutic Outdoor Spaces in Dementia-Care Units

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### Introduction

There is an evident gap in the research regarding the environmental needs of older adults with Alzheimer's disease and related dementias (ADRD) and the design of therapeutic outdoor spaces for these persons. With the rapid growth of the aging population, appropriate outdoor spaces will become essential to improved quality of life for older adults with ADRD. There is a need to look further into the gerontology and environmental design research to formulate an integrative approach for the treatment of ADRD. If outdoor spaces address the physical and psychological impacts of the disease, in addition to fostering positive relationships between those who suffer from the disease and the environment, positive health outcomes are expected. This study explores nonpharmacological treatment approaches for persons with ADRD that can be facilitated in the outdoor environment. Lawton and Nahemow's Theory of Environmental Press, in conjunction with the implementation of multi-sensory stimulation as a therapeutic treatment are most related to the integration of gerontology and environmental design.

Appropriate environmental design can be of significant therapeutic benefit to persons with dementia. M. Powell Lawton (1999) argued that "basic human needs drive person-environment relationships" (p. 362), while additional researchers confirmed that a well designed environment can improve the well-being of the individual by responding to declines in the cognitive functioning of older adults with ADRD. Collectively, designers and gerontologists can identify therapeutic goals that will positively affect persons with dementia in outdoor environments by setting objectives regarding policy, programming, and design issues (Weisman, Cohen, Ray, & Day, 1991). By understanding related theories, current therapeutic techniques, and existing design, designers can successfully apply their knowledge and skills to an appropriate design for persons with dementia.

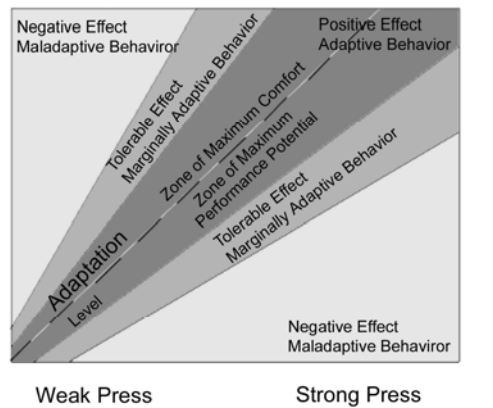
### The Theory of Environmental Press

The primary theory related to the interaction between older adults with ADRD and the environment is Lawton and Nahemow's (1973) Theory of Environment Press (TEP). The TEP stresses the significance of finding a balance

between persons' competence levels and the demands of the environment to improve persons' well-being. (Lawton & Nahemow, 1973). Adaptation to the activity, the environment, and to achieving higher order benefits will assist in attaining the desired adaptation level.

Prior to discussing the TEP further, it is important to clarify the foundation of the person-environment fit model. Lewin (1951) described "behavior as a function of the person and the environment," the person-environment (P-E) fit. P-E fit encompasses the personal components including health, sensory and motor skills, and cognitive function. Lawton and Nahemow (1973) described the environmental component as incorporating the physical environment, the personal environment, the small-group environment, the suprapersonal environment, and the social environment.

Lawton and Nahemow (1973) suggested that competence relates to the congruence between the older adult's abilities and the demands (press) of the resources in the environment. Consequently, there must be congruence between the environmental press and the individual, which is expressed as the adaptation level. As illustrated in Figure 1, the adaptation level is considered neutral press, which produces positive affect. To the right of the adaptation level is the zone of maximum performance potential where persons experience mild to moderate press, which results in positive affect. To the left of the adaptation level is the zone of maximum comfort, where individuals experience boredom and become underchallenged, resulting in a reduction of positive affect. If environmental demands are not balanced with the individual's capability, he or she will act out inappropriately, causing negative affect. The impact of environmental factors is stronger for older adults with ADRD; therefore, by increasing their competencies, environmental press may decrease.



(After Lawton & Nahemow, 1973)

Figure 1. Theory of Environmental Press

### Emotion-Oriented Approaches

The development of psychosocial methods for the treatment of ADRD has been prevalent in the past few decades (Finnema, Droes, Ribbe, & Tilburg, 2000). The purpose of these treatments is to reduce psychosocial problems of persons with ADRD, resulting in improved well-being and a reduction in maladaptive behavior. A primary goal of psychosocial treatment is that a greater amount of attention is given to the memories, experiences, and perceptions of older adults

with ADRD. This treatment is characterized by the emotion-oriented approach introduced by Verdult in The Netherlands and Belgium. His intentions were to design the treatment to match the feelings and needs of the individual with ADRD. Droes defined emotion-oriented care as:

Care aimed at improving emotional and social functioning, and ultimately the quality of life, of persons suffering from dementia by supporting them in the process of coping with the cognitive, emotional, and social consequences of the disease and by linking up with individual functional possibilities and the subjective experience of the person in question (p. 142). Validation therapy, reminiscence therapy, and multi-sensory stimulation, also known as, *Snoezelen*, are examples of emotion-oriented approaches. However, for the purposes of this study, multi-sensory stimulation will be the primary approach discussed. Finnema, Droes, Ettema, Ooms, Ader, Ribbe et al. (2005) suggested that emotion-oriented care, as opposed to pharmaceutical care, has resulted in greater positive affect among individuals with ADRD.

*Multi-Sensory Stimulation.* Multi-sensory stimulation, also known as *Snoezelen*, presents a therapeutic strategy that can be conducted in outdoor environments. *Snoezelen* was originally developed in the Netherlands in the 1960's for persons with learning disabilities, and to provide multi-sensory stimulation in a therapeutic environment for care-recipients with behavior and emotional problems (Lee, 2002). Hulsegge and Verheul (1987) explained that *Snoezelen* is based on the assumption that "the world in which we live is a mixture of light, sound, smells, tastes, and tactile sensations which we access through our sensory organs: eyes, ears, nose, mouth, and skin" (p. 120). The outdoor environment has considerable potential to maximize the senses.

According to Hall and Buckwalter's (1987) Progressively Lowered Stress Threshold Model, the stress threshold of older adults with ADRD will increase with a lack or excess of stimulation, in contrast with healthy individuals. Experiencing a lack of stimulation results in negative and null behavior, which is defined as physical inactivity and having no focus with eyes open (Kovach, 2000). Researchers suggested that an increase in negative and null behavior is not only a consequence of the progression of the disease but is also due to a lack of sensory stimulation. Several studies conducted with healthy individuals indicated that sensory deprivation results in delusions, disorientation, impaired concentration and motor skills, and decreased motivation. If deleterious effects are outcomes of sensory deprivation for healthy persons, then the effects for older adults with ADRD are much more significant. Other theorists have outlined the impact of sensory deprivation for persons with ADRD. Zuckerman (1964) explained that mundane environments may be stressful and consequently may impact the person negatively. Examples of ordinary outdoor environments include those that lack color, variety, variation in vertical and horizontal elements, and texture.

Researchers agree that sensory stimulation is a healthier treatment than pharmaceuticals since it will likely increase the adult's responsiveness and aid in facilitating a successful environment (Baseley & MacNeil, 2004). A common effect of ADRD is impaired olfactory ability. Aromatherapy and plants are elements that can be incorporated in a treatment to assist in stimulating the sense of smell. Researchers indicated that scents can influence an individual's mood and behavior. Thus, certain scents may reduce stress, anxiety, and depression. Useful oils include lavender, which produces a calming, uplifting effect; chamomile, which reduces depression, insomnia, irritability, and mood swings; and lemon balm, which reduces insomnia and mental stress (Baseley & MacNeil, 2004). Aromatherapy can be incorporated in the therapeutic garden by spreading fragrant oils throughout the air with a diffuser or by dispersing the oils in a water feature. Non-toxic plants integrated in the garden may stimulate memory and reduce anxiety for older adults with ADRD.

Although the normal aging process results in a decrease in visual acuity, visual stimulation may still be an appropriate therapy since it can minimize confusion and improve well-being (Baseley & MacNeil, 2004). In the outdoor environment, visual stimulation may be achieved by incorporating signs at eye level, by using non-glare surfaces, and by offering a variety of colors. Care-recipients with ADRD commonly misinterpret sounds. By reducing background noise and offering pleasant sounds, the person with ADRD may become more aware of his or her surroundings. Noise reduction is more relevant in indoor settings rather than outdoor environments due to paging systems, tiled floors, and thin walls. Nevertheless, locating a therapeutic garden away from a highway or an active space will provide a safer environment for older adults. Pleasant outdoor sounds may include birds, water, and wind chimes. Touch is an important sense that can assist in building a connection between the older adult with ADRD and the environment (Baseley & MacNeil, 2004). Touch may be incorporated in the garden through plants with various textures, sand, water, sculpture, murals, and a variety of materials.

Responses to sensory stimulation of older adults with ADRD in the late stages include: eye contact, blinking, a turn of the head either away or toward stimuli, reaching out for the stimuli, changes in facial expressions or verbalizing (Lucero, 2002). Researchers suggested that sensory stimulation has a high probability of compensating for losses in sensory functioning (Baseley & MacNeil, 2004). Accordingly, incorporating sensory stimulation in an outdoor environment has the ability to provide older adults with the opportunity to experience nature in every aspect of the senses, and may therefore improve their quality of life.

*Wander Garden.* Wandering, an undirected, aimless movement is one of the most common symptoms of persons with ADRD (Mather, 2001). Researchers estimated that wandering occurs in up to 40% of nursing home residents. Dan

Dokken, vice president of Law/Kingdon, an architectural firm, believes that by eliminating frustrations in the confused care-recipient, a safe environment will foster positive experiences in the outdoor environment. Diane Montgomery, RN (1996) believes that older adults with ADRD have a reason for wandering and it is important to not prevent them from doing so. If wandering behavior occurs, it most likely means that the person has needs that must be met. Accordingly, an objective of the wander garden is to direct the care-recipient's wandering behavior along a sensory-enriched looped pathway for additional stimulation.

Wander gardens can be particularly therapeutic in responding to the stages of ADRD. Reisberg (1982) described the stages of ADRD in his Seven Cognitive Stages of Dementia. Stages 4 through 7 address the cognitive and behavioral problems associated with persons in wander gardens. Because attention span has decreased and learning is unusual in Stage 4, older adults should be encouraged to become involved in activities that are familiar. Visual cues are important sensory elements that promote "goal directed" activities in this stage of the disease.

In Stage 5, the lack of awareness of tactile cues is the main concern for persons with dementia. Wandering, agitation, and the loss of spatial orientation become significant problems. Touch provides pleasure to the person through interactions with various textures. At Stage 6, middle dementia, older adults with ADRD respond to positive stimuli, such as horticultural therapy or walking through a sensory rich garden. Symptoms related to this stage are a reduction in attention span, incontinence, and fear of being left alone. And at Stage 7, the terminal stage, the care-recipient can only respond to immediate cues. Aphasia and ambulation worsen at this stage and sensory stimulation becomes essential.

John Zeisel proposed a useful model for environmental design (Figure 2), based on Maslow's hierarchy of human needs construct. Zeisel's model relates the design of a wander garden to the various levels of needs that must be met to represent a high quality of life (Zeisel, 1999). The most basic needs that must be met for older adults with ADRD are physiological, which include safety, health, nourishment, and shelter.

Older adults are at higher risk for changes in temperature; therefore, buffer plantings, trellises and awnings, shade trees, and umbrella tables

should be incorporated in the design (Carstens, 1998). The incorporation of resting spots, drinking fountains, and restroom accessibility also need to be considered to better accommodate the individual's needs. Because of a normal loss of visual acuity and extreme visual sensitivity that accompanies the aging process,

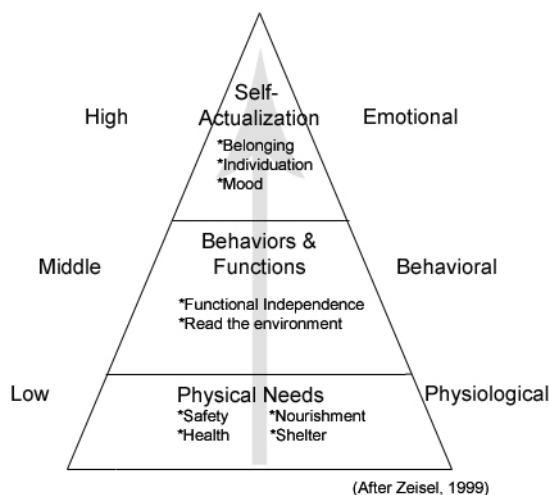


Figure 2. Quality of Life Model

lighting becomes an important factor when designing for older adults. To reduce glare, lights should be directed downward and should be placed at the periphery of a space for assistance in defining edges.

The next level of need responds to functional independence and proper use of the environment. Weisman (1991) suggested that a primary design goal is to avoid open spaces to prevent confusion and disorientation in the wander garden. The design should consist of sub-spaces that provide small gathering spaces for private or public recreation. The environment should offer patterns, sensory cues, and landmarks that will be easy for the person to recognize (Carstens, 1998). Providing spaces for recreation and the enjoyment of nature are equally as important as providing functional spaces. Offering a space for physical or music therapy creates the opportunity for the care-recipient to participate in a natural environment. Creating spaces for bird watching/feeding and gardening also allows older adults to involve themselves in the natural setting.

The central feature of the wander garden is the looped pathway which promotes movement and exercise. The designer should offer choices in the pathway for persons with varied abilities. Although the Americans with Disabilities Act, ADA, requires a minimum 4 foot width pathway for two people to walk side by side or a person and a wheelchair side by side, and a 5 foot width for two wheelchairs to pass, a minimum of 6 feet is recommended (Carstens, 1998). This allows two wheelchairs enough space to pass side by side. The pathway should lead the person through the sensory-rich garden while periodically presenting nodes for rest and further stimulation. The surface of the pathway must be non-slip and non-glare for fall prevention. Changes in grade should be avoided and the slope cannot exceed 1:20. Changes in color and texture should only be used where a change or transition occurs, to aid in orientation. To prevent escape and to assure safety, the wander garden must be enclosed by a fence or a wall camouflaged by vegetation. If trees are near, high-branching varieties should be chosen to deter the person from escaping by climbing the tree.

When plants and garden accessories are incorporated in the garden, they create additional interest. The most effective plant varieties are those chosen that attract birds and butterflies and create seasonal interest, such as monarda, lobelia, and buddleia (Carman, 2002). Herbs, such as rosemary, lemon balm, and lavender are also attractive additions to the garden. Garden accessories that promote reminiscence and stimulate the senses are necessary elements of the wander garden. Birdbaths, wind chimes, a wheelbarrow, a water pump, and a bicycle are few examples of components that can be included in the wander garden as they are everyday artifacts that elicit memories and thus support a higher quality of life for older adults with ADRD.

The highest level of quality of life is self-actualization, which incorporates belonging, individuation, and mood. A case study conducted by Mark



Detweiler, MD, MS and Carlene Warf, RCNA at the Virginia Veteran's Care Center (VVCC) in Roanoke, Virginia confirms the benefits of providing a wander garden for persons with ADRD. The specific therapy utilized for the wander garden was post-stroke rehabilitation (Detweiler & Warf, 2005). Stroke-related dementia, also known as vascular dementia, is the second most common form of dementia in the United States. One approach to meet these goals is creating a wander garden for outdoor therapy. This addressed the concern that residents "felt handicapped and self-conscious" in the conventional indoor therapy spaces. The goals of the wander garden were to reduce anxiety and apathy and increase stimulation, with expectations of increasing the progress in post-stroke rehabilitation (Detweiler & Warf, 2005).

Detweiler and Warf (2005) explained that the wander garden accomplished Kaplan and Kaplan's (1989) principles for healing environments: being away, extent, fascination, and compatibility. The care-recipients were removed from stress-inducing factors, such as higher-functioning individuals including staff, residents, and visitors; they traveled through passageways from the facility to the garden; nature intrigued them; and they found congruence between themselves and the environment. These four factors gave the post-stroke care-recipients an opportunity to use the wander garden as a place to heal. Benefits observed in the wander garden were improved attention, self-esteem, and stress and mood reduction. The study results provide evidence that by performing restorative therapy sessions in the wander garden, a positive effect is likely.

Two benefits of the therapeutic garden are the healing effects of being in the landscape and the benefits of mentally connecting to the environment through the senses (Milligan, Gatrell, & Bingley, 2004). The garden offers curved walkways, spaces for relaxation and social interaction, and horticultural therapy, while fostering an environment for exercise. Researchers documented that therapeutic benefits for older adults with ADRD are obtained from gardens (Barnes & Marcus, 1996). The therapeutic environment for care-recipients' with ADRD should safely accommodate the physical and mental disabilities of the adult and compensate for his or her loss of sensory functions; the landscape should respond to the person's abilities that are still intact (Lovering, 1990; Grefsroed, 2001).

Pachana, McWha, and Arathoon (2003) have established two areas of inquiry on the therapeutic benefits of gardens. The first are the effects that passive therapeutic environments have on older adults and the second are the benefits that involvement in the therapeutic gardens has for persons with ADRD. Self-confidence, cooperation, and social interaction are attributes that are believed to improve through passive interactions in outdoor spaces. When actively participating in outdoor spaces, older adults with ADRD have the opportunity to improve their psychomotor skills, orientation, and physical and mental stimulation (Pachana, McWha, and Arathoon, 2003). Physical conditions

that may improve are an increase in bone density and a reduction in heart failure. Researchers have also found a correlation between increased bone density, increased vitamin D absorption, and improved sleep cycles through contact with sunlight.

### Conclusion

The landscape can support interactions between people and the environment by responding to individuals' physical and mental disabilities and by compensating for their loss of sensory functions (Jencks, 2003; Lovering, 1990; Grefsroed, 2001). By incorporating therapeutic elements in gardens that promote stimulation of the senses, the person with ADRD may gain positive benefits from the environment. In addition to including therapeutic elements in the outdoor environment, employing psychosocial forms of treatment as an alternative to pharmaceutical treatments may be an effective approach to improving the quality of life of older adults with ADRD.

There is an unmet need to design improved therapeutic outdoor environments to benefit people with dementia. In addition to therapeutic design having significant potential to be of therapeutic benefit to older adults, it also presents designers with opportunities to manipulate the environment, which researchers suggest, may have positive effects on persons with ADRD. Although ADRD is an irreversible disease and a growing problem, landscape designers have opportunities to make positive impacts on the lives of the people who experience this disease.

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### **Feeding the World: A Challenge for the Twenty-First Century**

By Vaclav Smil. Cambridge, MA: MIT Press, 2000.

Photos of starving children and crowded cities from poor nations often remind us of Malthusian scary prediction that food production would not be able to catch up with the population growth if births go unchecked. *Feeding the World* by Vaclav Smil provides us an assurance that feeding the future generations would be possible if we increase efficiency in food production, reduce postharvest losses, take environmental protection measures, and adhere to rational diets. In the Introduction, Smil states, "consideration of the entire food chain, from soil bacteria to optimum diets, makes this book different from virtually all "can we feed ourselves" writings" (p. xxv).

Claiming himself as a Malthusian, Smil disagrees with both the catastrophists and the cornucopians. Smil does not accept the catastrophists' gloomy prediction and arguments that the planet has been already overpopulated, and environmental pollution are valid. Neither the cornucopians are not completely correct because their faith in inevitable solutions to the future crises seem too unrealistic. Smil finds himself in between these two opposing extremes, and searches for the ways of how we can feed the future generations? He meticulously documents enormous amount of facts, and research findings to support his arguments. His discussion does not end in appraising the availability of adequate land, and consideration of the entire food chain, environmental change and agroecosystems, he also reviews the accompanying social economic, political, and social transformations.

Smil identifies three reasons of concerns about our ability to feed the future generations- demographic, dietary and productivity transitions. There is no universally agreed projection about when the world population will stabilize; it could be 8.9 billion to 12 billion in 2050. This increase will pose challenge to agricultural production, especially in Asia, Africa and Latin America. At the same time, we are experiencing dietary transition- the transition from largely vegetarian to animal protein consumption, which is weakening the biophysical foundations of agricultural productivity. Examining the basics for food production, Smil states that we would be able to limit the negative impacts of soil erosion and environmental pollution. Smil also emphasizes on the need for reducing inefficiencies in food production. He sees possibilities of efficiency improvement for the use of fertilizer through better agronomic practices, use of water through irrigation with pressurized systems and promoting water conservation. It is also possible to increase reproductive and feeding efficiencies

for domesticated animals through breeding management, better use of organic wastes, better processing and storage of roughage and concentrate feeds, and so on. Global positioning satellites (GPS), and precise farming can contribute to improvement of efficiency, too.

According to Smil, reducing postharvest food losses is one of the ways we can gain in production efficiency. In low-income countries, postharvest losses of cereals surpass 10 percent, vegetables and fruits 25 percent, and the spoilage of fish catches by even higher proportion. Various nutrients of foods also are damaged during processing. Some of these losses might be unavoidable, but Smil regrets the enormous food losses in affluent countries at retail, consumer and food service levels. In his Endeavour to understand how to reduce inefficiencies, Smil focuses on determining how much food do we need? Human energy and protein requirements vary widely based on different shares of body mass made up of metabolizing tissues. Though FAO has recommendation of energy needs, Smil states that these recommendations are constantly moving because of culturally conditioned work habits and attitudes, seasonal fluctuations in staple diets, and environmental factors. Evidence also shows that whole populations can use their food energy much more efficiently through successful adaptations to reduced food availability.

Industrialization and postindustrial modernization have caused some undesirable nutritional shifts in our diets. While in most preindustrial societies no more than 10 and even less than 5 percent of energy comes from animal protein, in North America and Europe around 30 percent of all food energy comes from the same. As low-income countries are getting modernized, the westernization of diets is becoming the major trend. Examining the diets of different cultures, Smil concludes that Mediterranean diet is the optimum diet. This diet has been the prototype of healthy eating for prevention of CHD, and achieving long life expectancies.

Though this book is rich in facts and articulated arguments, one disappointing and frustrating limitation of Smil's entire thesis is his bypassing of the importance of sociological and political contexts. Feeding the world might remain a pressing issue but Smil overlooked the fact that much of the hunger and poverty that poor nations are dealing with have some political economy context. People are starving in many parts of the world not because we have become overpopulated, but because of inequitable distribution of resource and power. His environmental and technical fixes sounds too simple as he fails to take into consideration the powerful effects of neocolonization and globalization in regard to prevailing food insecurities in some nations of the world. Also according to recent literatures, in the rich nations where absolute poverty is no longer a major problem, relative poverty and deprivation has become a major threat to social cohesion. In addition, Smil's conclusion of Mediterranean diet as the optimum diet for the humankind is a narrowly focused and hastily draws conclusion. After discussing wastage of foods, problems of obesity he could provide us with

a broader solution such as promoting ecologically sustainable culture, which is learning to live with less, recycling, etc.

One of the strengths of this book is that Smil's description and arguments are devoid of disciplinary jargons. The individual chapters provide good overview for upper-level undergraduate and graduate students from a wide range of disciplines including demography, environmental science, economics, geography, and sociology.

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# On the Edge of Scarcity: Environment, Resources, Population, Sustainability, and Conflict

Dobkowski, Michael and Wallimann, Isidor (Eds.), New York: Syracuse University Press, 2002. 296 pages

Scarcity has been a result of genocide; genocide has occurred in Indonesia, Cambodia, Bangladesh, Rwanda, and currently, Darfur. Scarcity is not only material, it is also the point beyond replenishment. "It would be surprising if severe shortages would not exacerbate existing tendencies toward resolving social and political problems through elimination of the groups thought to constitute the problem (Smith, p. 138)."

On a domestic level, the United States imports farm laborers from Mexico to buffer the shortage. When people are unemployed or are unlikely to gain employment, this class goes from lower class to underclass. Even as welfare undergoes reformation, many have and will gain employment, while many more have become homeless, hungry as "the underclass becomes more desperate (Cobb, 2002)." Once there was disparity between the lower and upper class, but now it is between the lower and underclass.

Using various authors throughout, this brilliant piece of literature takes an international approach and vividly depicts the evolution of a global economy. Thailand and Indonesia are established in the global economy. "Preindustrialized societies are labor-intensive, almost everyone is poor, but everyone has a place in the economy (Cobb, p.7)." On a macro level, income of people in miserable poverty would have to be increased 6 times in order to alleviate poverty today. The exponential growth of society creates ecological and economical catastrophe. The authors would benefit the reader with an essay on how scarcity haunts the elderly population, globally. Along with exponential growth, aging individuals in Great Britain, the United States, and Japan enjoy an increase in life expectancy and longevity. This aged group also contributes to competing for resources, experience barriers to accessibility, and economical conflict, as part of the unemployed (retired) population; this cohort also becomes marginalized. Additionally, the author indicates that there can never be infinite growth as every habitat has a carrying capacity. The carrying capacity is the ability to sustain the population without damaging the land and atmosphere. "Biophysical laws will, sometime this century, halt the expansion of the human-created system (Gowdy, p.38)." Attaining the carrying capacity is nearing as the world is overpopulated, resulting in competition for resources, famine, and water exhaustion.

*On the Edge of Scarcity* presents the history of humans seeking to have dominion over nature, destroying the elements that are not immediately beneficial (Gowdy, 2002). Gowdy uses the island of Nauru as a model, where phosphate rock, an element necessary for plant growth, was in abundance. Once European and Australian phosphate miners depleted the most valuable resource, the island became irreparable, and therefore relied on outsourcing for resources. This model accurately exhibits the situation of the United States, where there are few homogeneous resources and sustainability is determined by the process of outsourcing of people (immigration), cheap labor, and goods.

Furthermore, *On the Edge of Scarcity* declares that hunter and gatherers created balance and efficiency, “not because they had more, but because they wanted less (Gowdy, p. 41.)”, implying that there are environmental consequences for greed and insatiable lust for luxury. Gowdy examines the Hadza ethnic group from Tanzania, and noticed that they exhibited interdependence through a collective consciousness of discipline and delayed gratification, distribution, and elaborate understanding of their ecosystem. Trading and bartering for goods and services creates a balanced system which gives every person a place and purpose in the economy. Increasing urbanization, technology and the *want* for more, contribute to environmental degradation, the damaged atmospheres, melting Arctic caps, earthquakes, and other disasters. The book is diverse and suitable for those engrossed in the examination of environmental conservation, immigration, genocide, famine, affects of globalization and urbanization, and technological advancement. *On the Edge of Scarcity* also builds awareness for new readers, and stimulates the minds of those involved in work that aims to alleviate the aforementioned issues.

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## Governing Environmental Flows: Global Challenges to Social Theory

By Buttel, Fredrick H., Mol, Arthur P.J., Spaargaren, Gert. Ed. by Massachusetts:  
MIT Press, 2006. 377 pages.



The authors of this book all have mutual interests in environmental flows, sociology, and politics. These scholars, in the fields of environmental politics, international politics, sociology, and sustainability, all recognize the need to re-examine the policies involving global environmental flows (energy, water, biodiversity, waste, green products, etc).

## **OVERVIEW:**

As globalization continues to thrive, the issue of how to govern environmental flows inevitably emerges simultaneously. This book is a collection of essays that discusses both the theoretical and empirical perspectives of the importance of sociology and environmental change as defining characteristics of global modernity. These characteristics and role of this hybrid system's influence on environmental flows requires consideration when determining global environmental policy. Understanding the interrelationship between the environment, nation-state, and globalization is mandatory in the process of reinventing the "environmental state" (4). Many theorists conclude that the nature, role, and position of the environment are in constant flux; therefore, concluding that the examination of the role of the state is a primary objective of this book (15).

Hybrid systems, such as ecological networks, join physical and social aspects that apply to environmental change. This type of environmental flow perspective theoretically has a potential to stand high regard in concern with environmental policy making. Although there is a concentrated need for a "policy-making-project", the avoidance of dominance by the US and other powerful countries is strongly encouraged (152). Environmental change, such as, climate change and deforestation are global situations in with the actors (contributors) are key factors in understanding how to and contributing to sustainability. The goal of the reinvention of the state is not only livability, but this type of environmental policy includes sustainability and social justice.

### **THEORETICAL PERSPECTIVES:**

The theoretical perspectives included in this book have the potential of reinventing the nation-state in order to cater to the global multifunctional environmental changes that are inevitably occurring. Increasing the knowledge of environmental flows by defining these types of flows, discussing the relationship between social and environmental flows (hybrid systems), understanding the issue of power and inequalities, and exploring the possibilities and consequences of global governance, is a second objective of these collection of essays (61). By creating access to this type of information, knowledge of the role of hybrid arrangements and environmental sociology can become more prevalent and aid in the demise of the ignorance and misconceptions of the static conditions of the global environment. This type of knowledge and power can influence the creation of a multifunctional governance of these flows. There is a need to reinvent the role of the state, and according to this book, hybrid arrangements, systems and networks are the starting point for such change.

### **EMPIRICAL PERSPECTIVES:**

The second part of the book examines various case studies surrounding biodiversity conservation and the issue of governing nature, climate risk and international rivers, food labeling, green buildings, and the analysis of the existing mobile modern lifestyle. Through empirical research the authors have concluded the need for understanding the role of the nation-state is crucial when creating global environmental policies. Although the nation-state does not answer global concerns, the role of the nation-state needs to be included in the success of sustainability and international/global policy. All cases studies point to the need of analysis and the re-evaluation of the nation-state. The need for a multilevel form of government concerning environmental issues is evident and

promoted throughout this book. There is a need for Hybrid arrangements among governmental and nongovernmental local actors and institutions (256).

Modern life's necessity for mobility and the acceleration of time contradicts the concerns of environmental issues. This paradox of the modern mobile society is two-fold. The mobile life and the simple life are contradictory in terms of what people desire, yet, everyone wants everything. The question of how to live a mobile life in the modern technological world, and also attempt to solve the environmental problems that come with modernity still is unanswered. The authors call for more investigation of social and environmental flows is required in order create global polices that accommodate both the modern life and environmental concerns.

#### **CONCLUDING REMARKS:**

The inevitable global environmental changes that are occurring require a new approach of the nation-state that includes global policies. This book gives an overview of the sociological influences contributing to the change of environmental flows. Covering very detailed and broad theoretical and empirical perspectives, this book is geared toward those not only politically, but those interested in and involved with the global governance of environmental flows. Sustainability is the motivation behind the call for more scholars to study not only ecological modernization when policy making occurs, but also to include the study of environmental flows. By bringing the flows perspective to the attention of environmental sociologists and environmental politicians, a new approach to create global environmental policies is not only more attainable, but also has the potential to support positive changes with the global environmental situations we all face.

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## **The Ecology of Place: Planning for Environment, Economy, and Community**

By Timothy Beatley and Kristy Manning, Washington, D.C.: Island Press 1997

The Ecology of Place: Planning for Environment, Economy, and Community written by Timothy Beatley and Kristy Manning write an invigorating and hopeful proposal which gives the world an idealistic, hopeful, optimistic, and positive view of a possible future that is needed and becoming a must for cities and towns, but is based on realistic ideals, actual examples and sensible suggestions. The Ecology of Place: Planning for Environment, Economy, and Community is a book that is expected to be written for urban and city planners. However, the approach that Beatley and Manning take makes this book a great "handbook," for all who have any involvement or thought in seeing the future in an ideal manner. As Beatley and Manning discuss a world that has consumers who are sparing in their use. Communities that care about local environments and economies to ensure that the rich greenery last and the ideals of morals, values and ethics fall back into everyday life so that all are involved in making decisions and choices that are better for the whole of man. This book hits the target with reaching an audience that can and does move past the world of academia and professional planners and brings in any one who is involved in their community or wants to become involved in their community.

The use of land at present is destructive to the environment, economy, and social life. Low-density development consumes the land while creating an invasive isolation of economic and environmental problems and issues. While more communities and cities are looking toward the future with hope and anticipation it is hard to maintain the optimism as a different future sometimes seems as it may not be possible. However, there are options. There are always options. Beatley and Manning present a gripping and model approach to rebuilding and repairing communities and cities, which introduces a dream of "sustainable places" that goes beyond the usual design and structure that urban areas are used to. There are extensive ways to organize and functioning layouts and developments for communities to allow the communities to operate in the most ideal manner possible.

There is no original research in The Ecology of Place; however, the involvement and contribution to produce a large amount of material in a rational discussion of what is needed to create communities which are environmentally,

economically, and socially healthy is in high supply for those who are interested and willing to consider sustainable communities.

Beatley and Manning discuss problems throughout *The Ecology of Place* including ozone depletion, wobbly climate, fisheries collapsing, biodiversity loss, declining sperm counts, and more. The problem that is discussed probably more than anything is the extensive ecological decline that has increased the need for more "sustainable development." There is a need to be able to have a community that wants a future which cares about the environment and entire community. To take a minute and reflect on the idea of "sustainable development," reveals it to be completely encircled. This is illustrated in the introduction to *The Ecology of Place*.

Beatley and Manning are constantly making an effort to differentiate planning for sustainability and sustainable places from new traditionalism or new urbanism. They acclaim new urbanism as a significant foundation for the present revision and reassessment of planning. The support for compressed communities and patterns that emphasize transit and pedestrian oriented developments including the recognition of the importance of public spaces are found particularly important. Beatley and Manning also bring forth the serious worry about of new urbanism. The first thing pointed out is that urban practice has not considered the transit and pedestrian oriented developments. Most projects that new urban planners are involved are more visible in suburban and ex-urban areas. The greater concern that Beatley and Manning have are that a few of the new urban planners' projects are designed to minimize the impact of the environment.

The rapid decline in the environmental system comes from substantial increases in consumption of resources as well as the production of waste increasing a considerable amount. This is an extremely controversial idea which is shared by the idea of global economic output since World War II.

Preparing and planning for sustainable places includes designing the solutions that fit and are able to coexist in the best interest of not only people but the environment as well. Land use whether for conventional housing or commercial is still a major concern. The fact that we must manage the growth of the land use is essential to all; however, there are still many other concern equivalent regarding significance and magnitude. One main necessity to understanding communities especially cities, is that they are inherently rooted inside larger systems and the progression and development that naturally occur and depend on. This suggest that land patterns for industrial, economic, and environmental activities need to work together as a community so that all

buildings and structures are designed and built to fit in the communities needs and wants to enhance the environment and deal with waste.

This book is a motivated challenge and attempt to describe and portray an approach to planning that concurrently deals with concerns about social and economic opportunities as well as the quality of human life, and environment. When Beatley and Manning wrote the introduction to the book they were sure to cover their sense of urgency and crisis regarding the over development of urban areas as well as presenting their ideal vision for a different type of settlement pattern which is built on the concept of sustainability. They lay out a large variety of shaping and developing to show their alternative vision in the second chapter. Beatley and Manning supply an extremely rich discussion of how to move forth to create sustainability in communities. They are successful when they speak of the urban structure with the resistance of cities and regions to live in a more environmental and ecological landscape which continues into economic development and issues of civic involvement and socialism type ideas moving toward a more nurturing and diverse culture. While some of the ideas are not really new the core of the book does focus on compacting and condensing the ideal of combining with nature so that the ecological limits are encompassed, the community becomes self sufficient in its economics, and the sense of connections within a community are clearly seen by those in the community and from afar. The ideas in this book are so real and tangible that you as the reader in your mind start visualizing what can be done and what to do to start accomplishing the goals of the community. Each chapter brings the ideas across in an understandable and real manner with a variety of real examples mostly from our backyards. The topics are then brought together in a way to see how they all complement and reinforce each other.

The book continues on to the logical step in encouraging and promoting more sustainable communities. Beatley and Manning start by explaining and identifying elements of a new ethical environment and community which proposes and recommends the actions that must take place to be the ideal. The authors then discuss specific actions which can help communities move toward and become places of sustainability. This revolves around the ideas of planning, visions, strategies, communication, and strong partnerships within the community.

This is not an instruction manual, textbook, how to guide or a “for dummies” book this is more about the spirit and heart of the book. The examples are there to inspire the fire for further thinking about how communities can work in the future so that they can collaborate and organize to become sustainable. This book is a wonderful piece for planners, board members,

activist, etc... as well as those who want to become involved in the community. It gives hope and presents ideals for all who read.

Review by Brandy Benton-Rogers  
School of Community Service  
University of North Texas

## **Aging, Globalization and Inequality: The New Critical Gerontology**

Edited by Jan Baars, Dale Dannefer, Chris Phillipson, and Alan Walker. Baywood Publishing Company, Inc., Amityville NY.

*Aging, Globalization and Inequality: The New Critical Gerontology* is written as a challenge to established scholars in the field of aging research to move beyond current theoretical orientations and focus on key issues and concerns towards theory development that embrace “ways in which both age and aging are currently being transformed as a result of the set of social forces surrounding processes of globalization” (pp1).

Written not as a text to be utilized within the classroom, but as a conversation with fellow scholars regarding the appropriate direction an emerging field of critical gerontology should take within a global society. Reading as a “Who’s Who” in the field of age and aging, sixteen authors contribute their expertise towards three thematic areas regarding theory development; biomedical influences and the interaction local, national and global dynamics have on the poverty of aging. Each chapter nudges the reader closer to utilizing a global-macro approach when contemplating the contextual meaning of aging within our modern world.

Following an introduction developed by the editors, Chapter 2 has Jan Baars laying the foundation for what he terms “reflexive modernization”, a form of modernity better defined to interpret the global descriptions of the changes taking place in contemporary society. Continuing to utilize a lens of macrosocial focus in chapter 3, Chris Phillipson takes the reader into what he describes as “a distinctive stage in the history of aging, with tension between nation-state-based policies concerning demographic change and those formulated by global actors and institutions” (pp43). Following the foundation established by Phillipson regarding the relationship between political economy and aging, chapter 4 provides a discussion by Alan Walker on the relationships between old age and the welfare state. Walker analyzes the orientation of a “risk society” on which this relationship has been based, while providing new implications for an aging

population. No book incorporating a macrotheory approach would be complete without incorporating the feminist perspective. Carroll Estes does an exemplary job in Chapter 5 of not only reminding the reader of the vulnerability of older women, but expanding one's thought process in terms of societal and global structures which render the life experience of women as being socially constructed, thus impacting outcomes in terms of aging. Section I ends with Dale Dannefer's challenge to develop a critical theory of aging that exposes oppressive structures, while providing a means to embrace the aging process as a natural phenomena of human existence.

The second section focuses on topics regarding the medical model, and bio-economics recognizing how Western medicine has impacted the social context of the aging process. Chapter 7 is a critique by Stephen Katz comparing and contrasting the concepts of "functional age" with that of "chronological age". Katz sees one important task for the field of critical gerontology as questioning the extent to which "functionality has emerged as a dominant way of understanding the aging process" (pp9). Maintaining the theme in line with the medical model, Neil King and Toni Calasanti examine old age as a social construction impacted by the anti-aging industry in terms of activity and consumerism. As with other aspects of the aging process, western medicine has migrated towards medical interventions to slow or erase the process in terms of cognitive status. Kathryn Douthit, presents a critical view of how political economy influences mental health treatment for dementia related diseases in Chapter 9. Market forces in a capitalist society and managed care promote mental health interventions that are deemed quick and cost-effective, but ignore the human aspect of mental health issues such as Dementia and Alzheimer's. Douthit argues for persons representing domains such as politics, economic and ethics to look past scientized intervention strategies and incorporate strategies for both prevention activities and humanizing palliative care.

Chapter 10 finds Larry Polivka and Charles F. Longino, Jr. presenting a critical analysis of much rhetoric found currently in American policy. The ongoing discussions of how best to secure the Social Security System, pension plans and Medicare are reflected throughout this chapter. Within chapter 11 Stephen Crystal analyzes the complex and dynamic interaction of health status and economic resources. Linda Burton and Keith Whitfield in Chapter 12 present an analysis of what is defined as cumulative disadvantage and family health, an aspect of the aging process that merges the concepts of macro social structure and negative effects stability in later life for individuals (but only from a national perspective and not from a global orientation).

Sandra Torres focuses on implications migration, ethnicity and culture should have on research activities regarding aging. She uses the term "peripheral elders" to describe those who are non-Western elders and discusses the challenges globalization brings in terms of incorporating their contextual experiences into our understanding of the meaning of aging and the expansion of



our current “gerontological imagination” (pp242). In the final chapter of the book, John A. Vincent tackles the concepts of global population changes and power relationships that lie behind these changes.

The field of gerontology, as with many others in the social sciences, is struggling to present an accurate picture of the human experience on a large scale, while not losing the subjectivity of the individual experience. Current trends in information technology and global market places have moved the human experience beyond the scope of one society. Understanding not only the interactions of a “shrinking world”, but the impact world politics, economics and cultural influences have on the aging experience is imperative as we face an unprecedented global, aging population. The writers of this book challenge the reader to consider such views, and to move beyond current perceptions of the aging process constrained by the boundaries of one society.

While the concepts are thought provoking and intriguing, the difficult reading level at which it is written greatly limits the audience. Filled with jargon and complicated sentence structure, one often finds the need to re-read the material in an effort to understand the author’s meaning. Additionally the complexity with which it is written will make it difficult to incorporate this book into an educational setting for purposes of instruction an environment highly conducive to expanding conceptual knowledge. The perspectives presented are based on Western society, specifically the United States and are not an adventure in global comparative analysis, as one might believe when reading the title.

Rebecca Judd  
Doctoral Student, Department of Aging  
University of North Texas

## Sustainable Communities in Zacetacas, Mexico Conference December 6<sup>th</sup> to 8<sup>th</sup>, 2006

### Water resources and irrigation Methods, to Achieve Advanced Agriculture in Arid Land

Rannan Katzir , Sustainable Agricultural Consultant, Israel

This presentation represents a basic approach which involves the integration of three principles: sustainable development, environmental remediation and technology transfer. In most of the globe's arid zones, serious scarcity of water is very common. People's food security is often connected with opportunities for applying irrigation techniques. Most of human kind's non-nourished communities are located in arid zones. Arid zones are determined as vulnerable to severe water shortage and other vulnerable ecological factors.

Almost half of the world's arable soils are located in arid and semi arid regions. Arid areas are characterized by low precipitation rate, high rates of evapo transpiration, extreme climatic conditions, high salinity, intensive solar radiation, vast land areas and low population pressure. Arid land could be environmentally remediate provided the developing of water resources and introducing of advanced irrigation methods. This could dramatically improve food production and security, farmer's income and rural-society level of living. About 60% of global water consumption involves with agriculture. Humanity, facing water scarcity, has to introduce water-saving irrigation methods to achieve a higher water irrigation efficiency rate. Developing water resources in arid zones include the conveying water remotely from an out-region resource, using saline and thermal water; rain-water harvesting through soil conservation methods to increase soil moisture, building dams and reservoirs, taking advantage of lakes and rivers resources, recycling sewage water and desalinization of brackish and sea water.

To achieve a higher efficiency of irrigation water use, it is necessary to limit the use of traditional methods such as furrow and flood irrigation which is considered as water-wasting irrigation systems. Sprinkler irrigation is also considered as a water waste system due to the high evaporation rate. More recommendable is the enhanced use of drip and mini sprinklers which are more precise and accurate and save water due to minor evaporation rate.

It is also important to introduce water-monitoring control devices in order to achieve more precision and accuracy in field-water application. Field methods are used to measure the daily water evaporation rate, the reduction of soil moisture capacity and plant sensors apparatus which measure directly the plant water needs. Field practices such as soil mulching, green houses and net coverings for plants are known to reduce water evaporation.

Low water consuming xerophyte species like jojoba, pitaya, tuna and others has been introduced. In the future it is expected that advanced technologies of desalinization of brackish water will be used. A experimental system based on dry desert climate condition will convert sea water into energy which will be used for sea-water desalinization.

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## DISEÑO, ESTABLECIMIENTO Y EVALUACIÓN DE MODELOS “HUERTOS” DE PRODUCCIÓN DE DURAZNO, EN EL ESTADO DE ZACATECAS, MÉX

Jesus Llamas Llamas, Professor, School of Agronomy , U A de Zacatecas

En el estado de Zacatecas, la superficie plantada con durazno es de 17,000 ha, aproximadamente, de las cuales el 90% es de temporal y solamente el 10% es de riego. Este cultivo es de gran importancia socioeconómica, debido a que la economía de más de 3,000 familias del medio rural , dependen de este cultivo; además de que esta actividad es una importante fuente de empleo, condición que favorece el arraigo de las familias en sus comunidades.

En los últimos años, la economía de los productores de durazno, se ha deteriorado significativamente, debido los bajos rendimientos ( $2 - 3 \text{ t ha}^{-1}$ ) y la mala calidad de sus cosechas. Esta condición ha generado una fuerte emigración de la población del medio rural a las principales ciudades de Zacatecas y los Estados Unidos de América. Los principales problemas que limitan la producción de durazno son: a) sequía prolongada “noviembre - junio”; b) heladas tardías; c) alta incidencia de plagas y enfermedades; d) manejo inadecuado del cultivo y e) período de cosecha muy corto (septiembre). Para resolver estos problemas, se decidió establecer 10 huertos modelo de 2 a 5 ha, localizados en las diferentes regiones productoras, aplicando las tecnologías siguientes: a) construcción de almacenamientos de agua para riego; b) sistemas de riego por goteo; c) conservación y uso eficiente del suelo; d) selecciones que se adaptan a las diferentes regiones ecológicas, con períodos de flor - fruto desde 120 hasta 190 días y que producen frutos de buena calidad; e) manejo eficiente del cultivo (nutrición y MIP). Actualmente se tienen establecidos 8 huertos, localizados en diferentes regiones productoras y se han obtenido los resultados siguientes: a) una gran variabilidad genética (10 selecciones con diferentes épocas

de floración y maduración de fruto, “mediados de febrero – finales de marzo y mediados de junio – principios de octubre”, respectivamente, que producen frutos de excelente calidad y demanda en el mercado); b) rendimientos preliminares de 15 – 18 t ha<sup>-1</sup> y frutos de excelente calidad; c) el precio del durazno en fresco se incrementó de 4 hasta \$9.00 kg<sup>-1</sup>. Estos huertos modelo, se están utilizando como centros de demostración y transferencia de tecnologías eficientes y sustentables. Finalmente, es importante señalar que para el período febrero – abril de 2007, se tiene programado establecer otros dos huertos modelo e injertar 30,000 patrones con selecciones sobresalientes.

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## Designing , Establishing and Evaluation of Peach Profuction Model Orchards in the State of Zacatecas, Mexico

In Zacatecas State, the peach planted area is estimated in 17,000 ha. aprox. 90% of this area has no irrigation water and the remaining 10%, is cultivated under different irrigation systems only. This crop has a great socioeconomic importance, because of the economy of more than 3,000 families of the rural areas depend on it; besides, this activity is a very important labor source (1'300,000 day work yearly), condition favoring families producers landed property in their rural communities. In the last years, the economy of peach producers has become worse every year, due to the low yields (2 – 3 t ha<sup>-1</sup>) and poor crops fruit quality. This condition has caused a strong migration from rural areas to the main State cities and even worse, to the USA.

The main unfavorable problems to peach production are: a) long draughts (from November to June); b) late frosts; c) high pests and diseases incidence; d) inadequate crop management and e) a very short harvest period (September only). In order to solve these problems, the academic agronomy unit (AAU) of the Zacatecas Autonomous University, decided to plant ten peach model orchards, localized in different productive areas of the State, applying new technologies like: a) construction works for water storing; b) drip irrigation systems; c) soil conservation works and its efficient use; d) use of peach varieties matching local environmental conditions, with flower – fruit periods from 120 to 190 days and producing high quality fruit; e) efficient crop management (nutrition and IPM).

In the last three years, we have planted 8 peach model orchards in different productive regions of the State and the main results are: a) we have found a great genetic variability (10 varieties having different flowering and ripening dates “ middle February to late March and middle June to early October”, respectively), producing excellent fruit quality and market demand; b) 15 to 18 t ha<sup>-1</sup> preliminary yields and finally, the most important for peach producers, the fresh fruit market price has increased from 4 to \$9.00 kg<sup>-1</sup>, giving them a real opportunity to improve their living quality. The model orchards have been used as demonstration and efficient and sustainable technologies transferring centers. Finally, it is important to point out that for February - April 2007 period, we have programmed the establishment of two more model orchards and grafting 30,000 peach rootstocks using the best varieties we have.

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## Integration and Inclusion of Persons with Disabilities - Increasing Community Sustainability

Paul Leung , PhD. Chair and Professor, Department of Rehabilitation, Social Work, and Addition, University of North Texas

Persons with disabilities can make major contributions to communities that increase their sustainability given the opportunity. More often than not, persons with disabilities have been denied opportunities of participation, education and training that would enable their full inclusion and integration into their communities. Removing barriers for persons with disabilities can go a long ways toward increasing not only the sustainability but the vitality of communities.

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## Healthy Communities - Patch Model - *Planned Approach to Community Health*

Maudia Gentry, MSW, PhD Social Service and Gerontologist

The Planned Approach to Community Health is a community health-planning model. The Centers for Disease Control and Prevention developed the concept in the mid 1980's. The purpose of the model was to establish partnerships between state and local health departments and community groups.

The Planned Approach to Community Health (PATCH) uses whole communities to plan, conduct and evaluate health promotion and disease prevention programs. The process helps communities establish health promotion teams, collect and use data, set health priorities and design and evaluate interventions. The process also addresses and identifies health problems, needs for health plans and plan development procedures, analyze adaptability with existing programs and plan services for the community.

PATCH has one goal. It is to increase the capacity of communities to plan, implement and evaluate comprehensive community based health promotion programs targeted toward priority health problems. Its structure comes from the philosophy of the World Health Organization; to promote health for all. Promoting health for all enables communities to address community health and resources, encourage communities to plan effective strategies and assist communities conduct thorough community assessments.

PATCH promotes linkages within the community and linkages between the community and state health departments, universities and other local, regional and national organizations that provide data, resources and consultations. PATCH is an effective community health-planning model used by many states, communities and even several nations.

There are five elements to creating a successful PATCH program. They are:

- Community Members Must Participate In the Process
- Data Guides the Development Of All Programs
- Participants Develop a Comprehensive Health Promotion Strategy
- Evaluations and Feedback Guide Program Improvement
- The Community Capacity For Health Promotion Should Increase

There are five phases to executing a PATCH Community Assessment. They are:

- Mobilize the Community
- Collect and Organize the Data
- Choose Health Priorities
- Develop A Comprehensive Intervention Plan
- Evaluate PATCH

PATCH is adaptable to most communities. Its adaptability addresses health problems specific to all communities because the phases of the process remain the same. The phases may be repeated as often as needed and repeated as new health priorities arise. Within the community, new target groups may be selected. New interventions may be developed.

## Building Sustainable Communities- The Role of a Christian College-- Watershed Partnerships: *Collaboration for Environmental Decisionmaking*"

Kendall Brune, PhD

This presentation represents a community partnership between a private higher education facility (St. Louis Christian College), public school districts (Ferguson-Florissant School District & Special School District), and the State of Missouri's Department of Conservation. The U.S. Environmental Protection Agency & the Missouri Department of Conservation emphasizes community-based partnership building and decisionmaking within watershed areas. During these collaborating efforts basic skills, potential pitfalls, and rewarding results of community-based environmental partnering and decisionmaking will be explored. In small group settings, students and participants will explore current community-based projects and state-of-the-art approaches through presentations by expert conservation practitioners. Students will realize the prominent roles that leadership, assessment, plant and animal ecology, ingenuity, and modeling play in sustaining healthy watersheds.

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## About the Convenience of Becoming Responsible Consumers or De la conveniencia de convertirnos en consumidores responsables"

Diana Ortega , Laura Cristina Meza Pantoja,  
Juan Ricardo Flores Rojas y Yesenia Garcia Garcia

### Resumen

A pesar de que la problemática ambiental puede ser abordada desde diversos ángulos, el presente texto gira en torno al comportamiento y a los hábitos cotidianos de los ciudadanos, en su calidad de consumidores de productos, servicios e ideas. Proporciona elementos que invitan al lector a cuestionar y a revisar su forma de vida. Enumera las consecuencias ambientales, económicas y sociales del estilo de vida pregonada por los medios masivos de comunicación y en cierta forma, impuesta por el sistema socioeconómico del que somos parte.

Intenta demostrar que el individualismo acendrado conduce a un callejón sin salida. La conciencia estrecha centrada en la búsqueda del “bienestar” personal y familiar como si se tratara de un ser o de un núcleo aislado de la sociedad y del ambiente no sólo es una quimera simple, sino una ficción riesgosa que atenta contra el bienestar propio y el bienestar colectivo presente y futuro.

Considera que el tránsito de esta conciencia de aislamiento a la conciencia de interrelación, es requisito indispensable para la construcción de una región y de un país más humano y justo, acorde con el orden subyacente del que emana la Vida. En síntesis, es un llamado urgente a asumir la responsabilidad por nuestros actos y a cambiar hábitos y prácticas, que al multiplicarse por los millones de habitantes que pueblan este país, tendrán un impacto significativo en la reducción del consumo de recursos naturales y energía, y en la disminución de la contaminación que genera cada ciudadano. Asimismo, al analizar las ventajas de adquirir productos regionales y nacionales sobre los extranjeros, así como elegir el establecimiento en el que compramos los satisfactores, tendrá efectos positivos en la economía y en la sociedad mexicanas.

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## Building Relationships: Connecting Cultures and Countries

Dr. Samuel Zachary, Associate Dean of the College of Arts and Sciences, Leo Calderon, Director of Latino Students Affairs, Belle Zembrodt, Assistant Director of the Honors Program and Kelli Sittason, Coordinator of the Honors International Teaching Fellows.

Currently, Kentucky public high schools graduate approximately 900 Latino students annually. Within the next twelve years that number is expected to balloon to as much as 12,000 students. The demographics of Northern Kentucky University tell us that the vast majority of our students are Kentucky residents and will stay in the Northern Kentucky area throughout their lifetime. Therefore, Northern Kentucky University must join with and lead this community in understanding the needs, culture, and heritage of the growing Latino population.

In his Fall Convocation 2006-2007, Dr. James C. Votruba, President of Northern Kentucky University, offered a challenge: ...one of the greatest contributions that NKU can make to our region is to become a more internationalized campus. Vision 2015 emphasized the need for the region to become more global in its perspective and the University can and should lead the way. This would involve



more of our domestic students studying abroad, more international students studying on our campus, more partnerships with international universities, more faculty exchange programs, more partnerships with international companies, and revisions in our curriculum to make it more international in its scope. It's clear to me that, for our students to succeed in their careers and as citizens, they must have an international perspective. We need to become a more international campus for the sake of our students and our region.

In response to this mandate and the needs of the university community several programs and opportunities have become available and more are in developing stages. Please join us in a panel discussion concerning these changes and how a closer tie with the Mexican community can help us reach the goals outlined by our university's forward vision and, most importantly, assist the people of Mexico in reaching their goals of sustainability, universal quality education, and economic development. After our brief presentation we would like to open the discussion with the audience to generate ideas, strategies, and networks that can make some of the goals of this conference a reality.

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## Estrategias ambientales para el desarrollo de la floricultura en el Estado de México

Juan Carlos Sánchez Meza<sup>(1)</sup>., Víctor Francisco Pacheco Salazar<sup>(1)</sup>., Thelma B. Pavón Silva <sup>(1)</sup>., Salvador Adame Martínez<sup>(2)</sup>., Alejandro Alvarado Granados<sup>(2)</sup>., Miguel Acevedo<sup>(3b)</sup>., Tom LaPoint<sup>(3a)</sup>., Paul Hudak <sup>(3b)</sup>., Barney Venables<sup>(3a)</sup>., Bruce Hunter <sup>(3b)</sup>.

De La apertura México ante la globalización a través de la firma de los diferentes tratados comerciales le brinda la oportunidad de participar bajo nuevas exigencias y reglas comerciales. Esquemas de manejo sustentable del proceso de producción de flor influirán sin duda en la actividad florícola y otras actividades productivas. Hoy se reconoce que el cuidado sobre el medio ambiente y la seguridad laboral son requisitos para exportar un producto al mercado internacional, el cual requiere un control más estricto del uso de agroquímicos (plaguicidas y fertilizantes), así como un manejo racional de los recursos.

Se estima que en México existen actualmente 14 mil 400 hectáreas de producción de flores, plantas y follajes, de ellas 11 mil son para flores; 92 por ciento se cultiva a cielo abierto y 8 por ciento en invernadero. Los principales

Estados productores son: El Estado de México (53%), Puebla (23%), Sinaloa (11%), Baja California (4%) y Guerrero (3%) . La gran mayoría de la producción se comercializa en el mercado interno y menos de un 10% de ella se exporta. En el Estado de México se asume que existen más de 10,000 floricultores, el 95% corresponde a pequeños y medianos floricultores, los pequeños floricultores constituye n el grupo más numeroso y son los que tienen mayor vulnerabilidad económica, se caracterizan por cultivar en superficies reducidas, muchas veces con mano de obra familiar, las áreas de cultivo prácticamente colindan con el traspatio de sus hogares, con bajos niveles tecnológicos, deficiente material vegetativo, poca diversificación de la producción y poca o nula asistencia técnica

Cumplir con los requerimientos de calidad y de producción responsable en cada uno de los eslabones de la cadena de producción de flor para exportación constituye uno de las principales limitaciones y retos de los productores mexicanos para el ingreso al mercado de exportación.

El propósito de este trabajo esta orientado a analizar la problemática ambiental derivada de la producción de flor en el Estado de México y proponer alternativas a los pequeños productores para el desarrollo de una floricultura sustentable.

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## Indicadores de Desempeño ambiental de la actividad florícola en el Estado de México.

Juan Carlos Sánchez-Meza<sup>1,2</sup>, Víctor Francisco Pacheco-Salazar<sup>1,2</sup>, Thelma B. Pavón Silva<sup>1</sup>, José Antonio Gómora-Jiménez<sup>2</sup> Salvador Adame-Martínez<sup>1</sup>, Beatriz Barrientos-Becerra<sup>2</sup>

La exigencia del mercado mundial para la flor de exportación bajo criterios de sustentabilidad hace necesaria la evaluación de la situación actual de esta actividad en nuestro país; el municipio de Villa Guerrero, ubicado al sur del Estado de México, es el más representativo de la producción de flor de corte, que como toda actividad humana, implica una explotación e impacto sobre el medio natural.

El objetivo de este estudio consistió en identificar los impactos adversos producidos por la actividad florícola sobre el ambiente, para lo cual se realizó un

análisis integral de las diferentes etapas del proceso de producción de flor. Se aplicaron encuestas a productores, entrevistas con expertos y se realizaron visitas de campo en una comunidad perteneciente al municipio de Villa Guerrero, denominada San Mateo Coapexco, cuya principal actividad económica es la floricultura. La información obtenida acerca del proceso productivo de flores fue registrada y analizada en función del método de Batelle-Columbus para la evaluación del impacto ambiental a través de la integración de una matriz de impactos.

Los resultados preliminares, indican que los factores ambientales agua y suelo, por estar implícitos directamente en el proceso productivo, son los más vulnerables. Los impactos ambientales más significativos identificados fueron: el cambio de uso de suelo de forestal a agrícola; la erosión y pérdida de productividad del suelo; el alto consumo y deterioro de la calidad del agua; la emisión de bromuro de metilo a la atmósfera usado durante la desinfección del suelo; la contaminación del agua por aplicaciones de fertilizantes y plaguicidas; el uso indiscriminado de plaguicidas altamente tóxicos, para procurar y proteger los cultivos, con las correspondientes implicaciones en la salud de las personas expuestas a estas sustancias y en la fauna local; además de la inadecuada disposición final de los residuos generados durante el proceso productivo, principalmente los plásticos utilizados como material de cubierta de invernadero y los envases vacíos de agroquímicos contribuyendo al deterioro de los recursos naturales. Derivado de estos impactos es posible identificar algunos indicadores importantes como la calidad y cantidad de agua que se emplea, el volumen de residuos que se generan, tanto peligrosos como no peligrosos, la carga de plaguicidas aplicada a los cultivos, así como la integración de otras estrategias alternas para el manejo de plagas y enfermedades.

Esta información será de gran utilidad para desarrollar en un futuro próximo indicadores cualitativos y cuantitativos del nivel de desempeño ambiental de las áreas de producción.

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## Estrategias ambientales para el desarrollo de la floricultura en el Estado de México

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Este proyecto tiene como finalidad contribuir a mejorar la competitividad y sustentabilidad de la producción florícola, a través del estudio integral de los sistemas de producción y su impacto sobre el medio ambiente.

Antecedentes.

La superficie dedicada al cultivo de flor en México representa alrededor de un 5.8% del área total estimada que se dedica a la producción de 349 cultivos en el país (375,000 has). Aproximadamente 21,970 ha son destinadas a la producción de cultivos ornamentales, de los cuales el 52% (11,424 ha) son dedicadas para la producción de flores y follajes de corte. En 1997 se sembraron 13, 851 hectáreas de flor.

En México, los principales Estados productores son: Estado de México (53%), Puebla (23%), Sinaloa (11%), Baja California (4%), Guerrero (3%), seguidos en menor porcentaje por entidades como: Morelos, Veracruz, Oaxaca, Jalisco, Distrito Federal, Michoacán, Chiapas y Nayarit, principalmente.

Se estima que en México existen actualmente 14 mil 400 hectáreas de producción (flores, plantas y follajes), 11 mil son para flores; 92 por ciento se cultiva a cielo abierto y 8 por ciento en invernadero, aunque no necesariamente se obtiene de ellas la mejor calidad.

La apertura de México ante la globalización a través de la firma de los diferentes tratados comerciales le brinda la oportunidad de participar bajo nuevas exigencias y reglas comerciales. Las cuales sin duda influirán en la actividad florícola y otras actividades productivas. Hoy se reconocen nuevas exigencias en

torno a los requisitos para exportar al mercado internacional, relacionadas éstas, con un control mas estricto del uso de agroquímicos (plaguicidas y fertilizantes) así como esquemas de manejo sustentable del proceso de producción de flor. Estas exigencias pueden crear una desventaja importante o comprometer su subsistencia para el desarrollo de esta actividad en relación a países competidores como Colombia, Ecuador y Holanda, quienes ya han incorporado prácticas ambientales y de seguridad laboral, como la racionalización del uso de plaguicidas, el manejo de los residuos, medidas de control en el consumo de agua y calidad de aguas residuales entre otras, para minimizar o evitar los impactos adversos sobre el medio ambiente y la salud de la población. Asociaciones como EUREPGAP y ALLIANCE, han dado a conocer en México desde hace algunos años, condiciones de certificación que se encuentran en operación por los países receptores de flores, como son los integrantes de la Comunidad Económica Europea y en los Estados Unidos de Norteamérica respectivamente, las cuales están orientadas a una producción agrícola segura y sostenible basada en los principios de prevención y análisis de riesgos, agricultura sustentable a través del manejo integrado de plagas y el manejo integrado de cultivos, utilizando para ello las tecnologías disponibles para el mejoramiento continuo de los sistemas agropecuarios. Para México la homologación de la Marca Calidad Suprema con la existente en otros países será de gran relevancia en un futuro próximo para impulsar la certificación de la actividad florícola.

Ello implica el establecimiento de normas de producción elevadas, la procuración de una industria de alta calidad, inversiones en tecnología de producción y poscosecha de punta, programas de capacitación, desarrollo de canales de comercialización en los mercados meta y añadiríamos un enfoque integral del proceso productivo compatible con el medio ambiente y la seguridad del trabajador.

Cumplir con los requerimientos de calidad y de producción responsable en cada uno de los eslabones de la cadena de producción de flor para exportación constituye uno de las principales limitaciones y retos de los productores mexicanos para el ingreso al mercado de exportación.

En localidades como Villa Guerrero y Tenancingo, en el Estado de México se puede observar que los productores de flores de corte se pueden agrupar en tres categorías. Existen los pequeños floricultores que cultivan reducidas superficies (algunas menores a 200 m<sup>2</sup>) muchas veces con mano de obra familiar, las áreas de cultivo prácticamente colindan con el traspatio de sus hogares, con bajos niveles tecnológicos, deficiente material vegetativo, poca diversificación de la producción y reducida o nula asistencia técnica; siembra a cielo abierto o bajo cubiertas plásticas rústicas conocidas como invernaderos de tunel, su mercado es fundamentalmente el nacional y cuentan con deficientes canales de

comercialización. Este grupo constituye el más numeroso y son los que tienen mayor vulnerabilidad económica. En este sector se concentran la mayoría de los productores de los llamados cultivos florícolas tradicionales o populares que no requieren técnicas muy especializadas para su desarrollo, como son los cultivos del crisantemo y clavel.

El segundo tipo se refiere a productores individuales con un mejor nivel tecnológico que manejan grandes volúmenes para el mercado nacional y en menor medida para el internacional. En este sector se encuentran los que acopian y comercializan al exterior parte de la producción con calidad de los pequeños floricultores y los que proveen de material vegetativo a muchos de los pequeños floricultores. Su problemática se refiere básicamente a la utilización de material vegetativo de dudosa calidad, la falta de infraestructura técnica como laboratorios para realizar análisis de suelo y agua, la carencia de información de mercados y la falta de asesores técnicos especializados en materia florícola. Finalmente un tercer grupo lo constituyen los grandes floricultores los cuales son básicamente empresas sustentadas por grupos de inversionistas que registran una alta tecnología en su producción. Estos generan los mayores volúmenes de producción de flor cultivados bajo invernaderos altamente tecnificados, con sistemas manuales o automatizados de control de temperatura, humedad y riego, que se destina a la exportación. Su principal problemática para algunos de ellos, se encuentra muchas veces en el desconocimiento de las normas que se requieren para exportar sus productos y en la diversidad de trámites que se deben de cubrir para la importación de insumos y material vegetativo.

No se cuenta con una cifra exacta de productores a nivel nacional, sin embargo se estima que una parte importante corresponde a floricultores medianos y pequeños (95%), tan solo en el Estado de México se asume que existen más de 10,000 floricultores. Cada vez se advierte una mayor organización de los productores a través de sus Consejos Regionales de la Flor de diferentes partes del Estado y sus asociaciones.

En el año 2000 se estimaba que existían aproximadamente 5,536 floricultores y que esta actividad generaba en el Estado alrededor de 75 mil fuentes de empleo, 25 mil directas y 50 mil indirectas.(Programa Campo Limpio, Gobierno del Estado de México). Actualmente se ha insistido en la necesidad de contar con un inventario confiable de productores tanto a nivel nacional como en el Estado de México.

Los objetivos Específicos de este estudio son:

1. Integrar una base de datos con información ecotoxicológica de los plaguicidas empleados y una evaluación diagnóstica del cumplimiento en materia ambiental del proceso productivo.

2. Proponer a los productores de la Asociación de Floricultores de Villa Guerrero (ASFLOREVI) una guía en la que se indiquen las acciones correctivas para mejorar el desempeño ambiental.

3. Realizar un estudio exploratorio de las concentraciones de plaguicidas de mayor uso, en suelo, agua y sedimentos y la aplicación de bioensayos para determinar su toxicidad en el medio

4. En colaboración con la Universidad del Norte de Texas, formar recursos humanos para la integración de bases de datos, el Desarrollo de un sistema de información geográfico y la aplicación de bioensayos para determinar toxicidad.

5. En colaboración con ICAMEX elaborar un programa de capacitación de los floricultores sobre el conocimiento e implementación de las diferentes medidas de mitigación de los impactos adversos identificados.

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### **Propuesta de Desarrollo Rural Sustentable en el municipio de Juchipila Zacatecas: Pueblo Viejo como estudio de caso**

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**Palabras clave:** Propuesta de Desarrollo, Desarrollo Comunitario, Pueblo Viejo, Pino azul

### **INTRODUCCIÓN**

En la actualidad, el problema del deterioro del medio ambiente es grave a nivel mundial, nacional y estatal; Zacatecas no se queda al margen de dicho fenómeno, tal es el caso específicamente de la región del cañón de Juchipila, en donde se han venido dando una serie de cambios, y modificaciones al medio ambiente, lo que demanda atención a dicha región, incluyendo otros aspectos de importancia, como la migración y el rescate de la cultura local.

En este sentido, y sin salirse de un contexto global, en donde la problemática de la reducción de ambientes sanos se ha venido dando a una velocidad estrepitosa, que obliga a pensar en propuestas alternativas de desarrollo, es decir; una estrategia donde se involucren tres de las principales dimensiones de la sociedad y donde se pueda fomentar el desarrollo Rural Sustentable:

1.- La actividad social

- 2.- Las actividades económicas
- 3.- La conservación del ambiente natural

Esto hace pensar en el modelo conocido como Desarrollo Sustentable, en donde se busca la conciliación de estas tres grandes esferas o dimensiones, que como ya se había mencionado, tienen exigencias que implica la conservación de los recursos naturales y, por el otro, está la urgente necesidad de la sociedad de obtener una serie de satisfactores socioeconómicos; por lo que es necesario buscar un equilibrio de intereses entre estas tres esferas de manera permanente (sociedad, economía y medio ambiente) (Ver figura 1).

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FIGURA 1. EL MODELO DOMINANTE DE “DESARROLLO SUSTENTABLE (DS)” (HOLMBERG, 1994).

Es imperativo resaltar el hecho de que para mantener el equilibrio antes mencionado, se necesita considerar al entorno natural como proveedor de beneficios ambientales, lográndose esto sólo con la colaboración directa de la sociedad, particularmente en el desarrollo de proyectos de conservación, manejo y aprovechamiento sustentables, ya que sin su participación sería muy difícil lograr los objetivos de conservación y de desarrollo económico (Cinta F. I. et al., 1998).

De lo anterior debe resaltarse la participación de los lugareños, ya que sin ellos el concepto de Desarrollo Sustentable, no es posible (Halffter G., 2005)

En este sentido, debe tomarse en cuenta que si se piensa en aislar una dimensión de las otras, esto no será una acción que conduzca al “*desarrollo sustentable*”. Los miembros de una comunidad sustentable deben concebir que la seguridad económica a largo plazo depende de sí se cuenta con un robusto ecosistema funcionando, un ambiente social saludable y un público totalmente involucrado en el proceso, en otras palabras, el “*desarrollo sustentable*” con base en el modelo de los tres capitales implica “*vitalidad económica*”, “*integridad ecológica*” y “*equidad social*” (Flint, 2002).

Existe la urgente necesidad de implementar una serie de acciones que encaminen al desarrollo sustentable para la región del Cañón de Juchipila, no sólo dar respuesta al problema del deterioro ambiental, sino que sería una propuesta a



seguir para poder llegar al desarrollo económico y social, sin comprometer el equilibrio ambiental.

Es importante señalar que el interés que se tiene en esta región, es en gran medida por mantener en Pueblo Viejo a la única población silvestre de pinos azules (*Pinus maximartinezii* Rzd.) del mundo, viniendo de ahí la urgente necesidad de protección y aprovechamiento, lo que lleva a buscar la puesta en marcha de una propuesta de desarrollo basado en la sustentabilidad.

No se debe conceptualizar a esta población de pinos, como una “isla intocable”, sino por el contrario, se debe abordar el problema con una visión diferente, de ahí la importancia de conocer los aspectos sociales, históricos, políticos, económicos, de la región.

Con este trabajo se pretende tener una propuesta de desarrollo rural sustentable para la localidad de Pueblo Viejo, ya que es la localidad más cercana a donde se encuentran los pinos azules y lugar donde residen sus propietarios.

En referencia a lo anterior, el interés va en el sentido de que es una de las localidades más antiguas de Juchipila, además de ser una de las menos desarrolladas en lo que a servicios se refiere, además de que las fuentes laborales no son las que los habitantes desean, motivo por el cual la emigración a los Estados Unidos de Norteamérica y estados vecinos (Aguascalientes y Jalisco) se da de manera evidente. (García-Zamora, R., 2005)

La propuesta va en torno a diversificar las formas de producción y de reproducción social de los habitantes, esto en relación a los recursos presentes, tomando en cuenta las condiciones bioclimáticas para obtener más y mejores productos sin la apremiante necesidad de insumos caros y sobre todo buscando la autosuficiencia alimentaria.

Como hace mención Carabias, (1995), “Si la sustentabilidad no se alcanza a niveles mas bajos, mucho menos se hará a niveles más altos”; con esto se está dando a entender que la escala a la que se deben de manejar las propuestas de desarrollo sustentable, son a escalas comunitarias, a caso municipales.

Por lo anterior se propone a la comunidad de Pueblo Viejo (PV), municipio de Juchipila Zacatecas, como “localidad piloto” para asimilar el modelo de Desarrollo Rural Sustentable.

Sin embargo, las características del “*Desarrollo Sustentable*” no sólo hacen difícil analizar la “*sustentabilidad*” sino también comunicarla para hacerla comprensible por la sociedad. La subjetividad inherente necesita ser organizada y expresada cuidadosamente para comunicarla desde diferentes perspectivas (Grosskurth y Rotmans, 2002)

## JUSTIFICACIÓN

En el municipio de Juchipila Zacatecas, se ha venido trabajando desde el inicio de las actividades del CRUCEN, ya que se le ha considerado como una región

importante, tanto para impulsar el desarrollo como para conocer los antecedentes históricos de la región, denominada Cañón de Juchipila. Por parte del CRUCEN, esto queda plasmado en el trabajo definido como “La Agricultura Regional en el Estado de Zacatecas”, específicamente en los trabajos: La Producción Agropecuaria en la Región de los Cañones (Ramírez-Miranda, C., 1993)

En otro trabajo expuesto, por otro de los investigadores del CRUCEN, se presenta un diagnóstico del Cañón de Juchipila, donde se marcan los grandes rumbos del desarrollo para este municipio, además de algunas características generales para cada uno de los componentes municipales del Cañón de Juchipila. El proyecto de investigación con el FOMIX-GODEZAC, que estamos desarrollando para conocer el estado de conservación del pino azul, se está desprendiendo la urgencia de elaborar una propuesta de Desarrollo Rural para y con los propietarios de este recurso natural para favorecer su conservación. Adicionado a lo anterior, el trabajo de campo realizado en el primer semestre de la Maestría en Ciencia en Desarrollo Rural Regional, se llevó a cabo en el municipio de Juchipila, por lo que se desprende la necesidad de dar continuidad a un primer diagnóstico, para continuar con el diseño de estrategias de desarrollo rural.

En los diferentes niveles que se ha planteado el Desarrollo Sustentable, se ha visto la urgente necesidad de la conservación de los recursos naturales, sin dejar de lado el aspecto económico y por supuesto el social, teniendo en la región de Juchipila y en la localidad de PV un panorama de desorden y sin líneas claras de desarrollo a seguir para las tres dimensiones ya señaladas, por lo que se pretende llevar a cabo una serie de propuestas que hagan que la situación mejore a favor de la gente de la localidad.

Para tal efecto, se plantea elaborar una propuesta que le sea atractiva a la comunidad, en este caso a PV, para evitar la emigración, o por lo menos reducir y evitar lo que algunos autores llaman “Dilapidando el Bono Demográfico” (Bartra, A. 2005) ya sea por necesidad económica o por costumbre, ya que en esta región la costumbre de emigrar a los EUA, se ha venido dando desde hace algunas décadas (García Zamora, R. 2005).

La propuesta gira en torno a ofrecer una serie de caminos u opciones que sean del “agrado” de los lugareños, buscando con esto que se generen opciones bien remuneradas.

Bajo este esquema, la propuesta es por sí misma importante, ya que por un lado se está tratando de dar un orden y un freno al deterioro ambiental y por el otro se abren las puertas del desarrollo local visto de una manera poco usual en el estado de Zacatecas.

Las propuestas girarían en torno al uso adecuado del agua, implementación de energías no contaminantes, uso racional de los recursos naturales, usos alternativo de recursos no maderables, abrir sendas de divulgación e investigación científica (social, ambiental y económica) a nivel de las localidades,

además de la propuesta de promover agricultura de bajo impacto, agricultura orgánica, propagación de alimentos poco conocidos en la región a pesar de ser nativos de ahí, de ganadería intensiva, en donde se puedan reciclar materia orgánica y nutrimentos a través de las deyecciones además de la aplicación de alimentación alternativa al ganado y sobre todo la participación campesina, de emigrantes y sobre todo de la gente que actualmente habita en la localidad de PV, ya que de ella saldrá la formulación del proyecto de Desarrollo Rural Sustentable específico para la comunidad de Pueblo Viejo; esa es la apuesta y para ello trabajaremos.

## **OBJETIVOS**

### *General*

Elaborar una propuesta para impulsar el Desarrollo Rural Sustentable de los habitantes de la comunidad de Pueblo Viejo, municipio de Juchipila Zacatecas.

### *Particulares*

Localizar los principales recursos naturales del municipio de Juchipila, Zacatecas.

Cuantificar los recursos identificados en el municipio de Juchipila.

Identificar los recursos mas importantes que antaño fueron aprovechados y que actualmente se han dejado de utilizar por el abandono de las tierras

Correlacionar el fenómeno de la emigración con la recuperación de las áreas de cultivo, actualmente abandonadas

Conocer las historias de las familias de la región

Conocer las actividades económicas actuales

Detectar cuáles son las perspectivas de desarrollo en la región

Dar un orden en el aprovechamiento de los recursos naturales de la región

Buscar diversas alternativas de desarrollo en la región, considerando las condiciones ambientales, sociales y económicas de la región.

Favorecer la recomposición sociodemográfica y ambiental de la región

## **METODOLOGÍA**

### *Definición de sitio*

El lugar en el que se trabajará la propuesta es la localidad de Pueblo Viejo (PV), sabiéndose que tiene una antigüedad mayor a la del mismo Juchipila, por lo que pudiera ser que tuviera mayor conocimiento en relación a los usos de antaño en

relación a los recursos naturales, además de como ya se ha mencionado, es la localidad mas cercana a la población de pino azul (*Pinus maximartinezii*.Rzd.)

*Lugar de estudio:*

La comunidad bajo estudio se llama Pueblo Viejo (PV), que pertenece al municipio de Juchipila, Zacatecas, México, ubicada en la Sierra Madre Occidental, al sur del estado de Zacatecas, sus coordenadas extremas son 103° 15' - 103° 12' W y 21° 20' - 21° 23' N, su altitud varía de 1300 a 2500 msnm y forma parte de la cordillera conocida regionalmente como Sierra de Morones. El clima local es semiárido, con temperaturas que van de los 18 a 22°C. Aproximadamente el 75% de la lluvia anual, ocurre durante el periodo de junio-septiembre, se tiene de 700 a 850 mm de precipitación anual. El periodo sin frío es aproximadamente de 275 días, desde mediados de febrero hasta mediados de noviembre. El periodo de frío ocurre principalmente en diciembre y enero, pero en muchas ocasiones puede estar presente desde mediados de noviembre (López, 2001)

**Tomado de:** López-Mata, L., 2001

**Fig. 2 Localización geográfica de la comunidad de PV, municipio de Juchipila Zacatecas**

*Obtención y Análisis de los datos*

*Fase I Diagnóstico Regional y Local*

Como primer paso, se obtendrá por diversos medios lo que se le denomina como *Diagnóstico*, es decir, se debe de conocer la situación actual y perspectivas de desarrollo, adicionado a un referente histórico, con esto se tendrá una perspectiva general de las tendencias locales.

El diagnóstico se formulará en torno a tres grandes esferas o aspectos a evaluar en el Desarrollo Sustentable; está el aspecto ambiental, el social y desarrollo económico.

Aspectos a evaluar:

Ambiental: en este sentido se abordará:

geología

morfología

suelos

clima

vegetación

fauna

contaminación

agua

recursos abundantes, entre otros.

Social:  
históricos  
características y tendencias políticas  
manifestaciones culturales  
capacidad d de organización  
flujo migratorios  
remesas

Económico:  
actividades económicas de interés  
formas de reproducción social  
medios para hacerse de bienes y servicios  
comercio (interno y externo)  
intereses productivos  
inversiones (federales, estatales, municipales, privados)  
programas de gobierno (Federal, Estatal y municipal)

Es conveniente aclarar que para cada uno de estos aspectos, se harán una serie de observaciones en donde se tengan elementos para diagnosticar la situación del municipio de Juchipila, y la comunidad de Pueblo Viejo.

Así mismo, se mantendrá no sólo en la fase I, sino en todas las Fases, una constante revisión de literatura, ya que se deben de mantener en constante revisión las actualizaciones en lo que respecta a alternativas de desarrollo, en donde se puedan hacer comparaciones con otras regiones dentro del país o incluso con otras regiones del mundo.

#### *Fase II Análisis y Sistematización de información*

Como segunda fase se tiene el análisis y sistematización de la información recabada a partir del diagnóstico, en esta parte se contempla iniciar la elaboración de la propuesta, es decir, a partir de los resultados arrojados por parte del diagnóstico, se iniciará la conformación de la propuesta de desarrollo para la comunidad de PV.

Se intentará realizar una interpretación integral de los componentes de las tres esferas.

#### *Fase III Elaboración de la Propuesta de Desarrollo*

Como última fase, se tiene la integración de la propuesta de Desarrollo Rural Regional para PV, en donde se tendrá que “engranar” cada una de las esferas estudiadas a partir del diagnóstico y el análisis.

Esto se hace con el fin de poder incluir la mayor cantidad de elementos de análisis y de diagnóstico, con lo que se podría llegar a una propuesta más cercana a la realidad de la comunidad.

Con lo realizado, se podrá contar con información tanto de carácter cualitativo, como cuantitativo, lo que ayudaría a enriquecer el trabajo, y como se ha venido manejando, a tener más elementos de juicio para poder hacer una propuesta viable en cuanto al uso de los recursos naturales.

Por otra parte, la observación de tipo activa, pasiva y participante de ser posible, será una de las herramientas básicas para la búsqueda de propuestas, ya que la integración en las localidades abre el panorama y sensibiliza en relación a las expectativas de vida y a las actividades e intereses familiares.

El análisis de la información se llevará a cabo posteriormente a la colecta de la información, en ella se tratará de obtener patrones generales a las respuestas de los entrevistados, con el fin de poder llegar a implementar una propuesta hecha con base a los comentarios y acercamientos a la sustentabilidad por parte de los residentes de PV.

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## Vida Cotidiana, Acción Colectiva y Desarrollo Local

Geovana Esparza Jasso  
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Uno: El concepto de desarrollo desde la identidad

En la historia reciente de América Latina son dos los modelos centrales alrededor de los cuales se han articulado las estrategias de desarrollo: (1) El de corte sociodemócrata, que se concretaba en las estrategias de sustitución de importaciones propuestas por la Teoría de la Dependencia, con el objetivo de impulsar el crecimiento hacia dentro, fortaleciendo el poder de compra y la implementación de medidas comerciales proteccionistas. Con lo cual, pretendían consolidar la industria nacional y, con ello, sustituir gran parte de los productos que se importaban, mejorar la balanza de pagos y consolidar la autonomía nacional. Esto es, son estrategias centradas en el Estado no sólo como gestor, sino como generador de Desarrollo y el ideal atractor es la autonomía del Estado-nación. (2) El otro modelo que vino a sustituir a este primero es el que hemos llamado *liberal-darwinista* que, por el contrario, se centra en el mercado externo y una política comercial aperturista-desreguladora como eje de crecimiento.

Ambos modelos son opuestos en sus estrategias, sin embargo comparten un denominador común: el mismo proyecto civilizatorio: conciben “desarrollo” como un amplio proceso tecnoindustrial moderno; es decir, ambos identifican *desarrollo y modernización*. Convierten a la sociedad tecno-industrial en la imagen-objetivo a alcanzar. Por tanto, aún con sus diferencias, convierten el desarrollo en un proceso unidimensional donde el objetivo es parecerse o imitar el camino de las naciones llamadas “desarrolladas”. En este contexto, bajo este modelo común,

las naciones de América Latina se auto-reconocen como “ subdesarrolladas”, esto es, como encaminadas al mismo objetivo sólo que en etapas anteriores de ese proceso de modernización.

La llamada “Crítica Sustentable” desnuda los supuestos de la teoría de la modernización; cuestiona la raíz de las implicaciones del proyecto civilizatorio de la modernidad, ¿es deseable y/o posible integrar al capitalismo global a la mayoría de la población periférica?, ¿es deseable y posible que los 4 800 millones de habitantes del mundo llamado subdesarrollado se conviertan en una clase media consumidora global? 1 De tener éxito las pretensiones de la modernización, de lograr la imitación del alto consumo energético que implica el sueño California estaríamos asegurando la muerte del planeta en cuestión de lustros. La lógica de la productividad y consumo de este modelo civilizatorio se topa con la viabilidad ecológica del planeta. Además de los efectos necesarios de este modelo en el terreno de la pobreza y el trabajo.

El objetivo de imitar el camino de las potencias tecnointerindustriales conduce, además, a importar no sólo estrategias y bienes de consumo y capital, sino que con ello se adoptan una constelación de valores, actitudes y normas de comportamiento. Fetichizan la técnica y con ello, omiten la pregunta esencial: qué producir y para qué, qué orientación y *contenido propio* se le da a la actividad económica. Con la codificación del consumo se moldea el perfil cultural de las naciones, se elimina su particularidad.

Sin embargo, nosotros consideramos que el desarrollo debe partir desde lo local y centrarse no en estructuras anónimas sino en la identidad. Esto es, la identidad debe ser la columna vertebral en las estrategias de desarrollo social

“Desarrollo” es un concepto en genitivo, es desarrollo *de algo*. Ese algo en la teoría de la modernización es una entidad abstracta y anónima, una estructura tecnoprodutiva. En la vía alternativa, por el contrario, *ese algo*, no es algo, sino *alguien*. El *vortex* del desarrollo no es una estructura anónima, sino las personas. Y las personas en colectivos forman lo que son y lo que quieren ser: su identidad. De tal manera que lo que se desarrolla es la propia identidad de los pueblos y no un modelo pre-puesto con falsas pretensiones de universalidad. El desarrollo no es un camino único, sino un proceso diverso: cada pueblo tendrá su propia orientación. En suma, lo que debe orientar y darle contenido a las estrategias de desarrollo es la propia identidad de los pueblos.

Si esto es así, entonces, *para generar procesos de desarrollo debe ponerse en claro las características identitarias propias* de los colectivos humanos en cuestión. A su vez, para que esto sea posible debemos pensar en espacios más estrechos que el propiamente nacional, e incluso estatal. Debe pensarse en espacios locales. Luego entonces, los procesos de desarrollo deberán centrarse en la potenciación de la identidad de los pueblos ahí donde esta se ejerce: en los espacios locales.

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<sup>1</sup> Reweiro Oswaldo, El Mito del Desarrollo, UNED, 2000

## **Dos:**

### **Identidad, acción colectiva y vida cotidiana**

La tesis del Programa de Estudios e Intervención para el Desarrollo Alternativo es la generación de desarrollo a partir de la comprensión de la identidad; por ello estamos obligados a iniciar un proceso de investigación de las características identitarias de la población de la zona de estudio. Esto ha conducido a indagar esas características tomando como vía de acceso el análisis de la *acción colectiva* en la historia de la Región.

La identidad se conforma desde la acción colectiva, es aquí donde se posibilita el desarrollo; sin embargo, al encontrarnos ante un proceso de fragmentación en la acción colectiva ese desarrollo no ocurre. Entonces es necesario contrarrestar esa fragmentación, y para ello *se deben encontrar las claves identitarias a través del estudio de la Vida Cotidiana*. Queda establecida la relación condicional entre identidad – acción colectiva y vida cotidiana para el desarrollo local.

La comprensión del Mundo de Vida posibilitará la comprensión de diversas formas de acción colectiva en cuatro ámbitos: religioso, político, económico-productivo y lúdico.

## **Tres:**

### **La investigación de la relación acción colectiva – vida cotidiana**

Debemos aplicar en los cuatro ámbitos de acción colectiva mencionados arriba, cuatro formas de análisis socio-antropológico:

I. *Contexto de acción*. Con dos apartados: rasgos nacionales y estructura de oportunidades.

II. *Análisis de anatomía compleja*. Con tres apartados:

La clasificación de los grupos alrededor del concepto de “interés”, “cálculo de beneficios” y “valores”; en tres capas de los grupos en acción: dirigentes, militantes y bases sociales. Y responder desde estos tres conceptos-eje a las preguntas, ¿por qué se involucran en la acción?, y ¿qué persigue cada uno de ellos (las capas de los grupos)?

Análisis del conflicto entre las distintas motivaciones, valores, imaginarios e intereses. Con ello conseguiremos poner en claro el ángulo de visión, los motivos de participación y las formas de acción.

Las etapas (rupturas consigo mismos) de la organización y grupos. Para ellos será indispensable un estudio de la distinción entre unidad de acción y unidad de fines en los grupos.



III. *Análisis de límites de sistema*. En cinco apartados:

Subjetividad de la pertenencia y reconocimiento propio. Análisis de los escenarios que construyen, cómo definen a los adversarios y a sí mismos.

Rango de variación de la estructura.

Tipología de su “movimiento” en función de la flexibilidad de las demandas (qué tan negociables son: el movimiento puede tipificarse como reivindicativo y/o antagónico) y la compatibilidad de las formas de acción con el sistema.

Niveles de los conflictos más representativos en el discurso de los actores.

Análisis de la respuesta del adversario.

IV. *Cotidianidad del mundo de vida*. Con cuatro apartados

Comunidad del mundo de vida y espacio social.

Acervo de saberes.

Ordenaciones legítimas.

Historias colectivas para analizar la justificación *usada* de las formas de acción y llegar finalmente a las Convicciones de Fondo.

#### **Cuatro:**

#### **Despliegue del trabajo de investigación**

El trabajo se ha iniciado a partir de dos proyectos. El primero es el de “Memoria e identidad campesina en la región de Tacoaleche, Guadalupe Zacatecas: análisis de los móviles de la acción colectiva en la historia del ejido ‘Francisco E. García’ como eje de comprensión de su identidad”. El objetivo de este trabajo es la investigación de las características identitarias de la comunidad de Los Rancheros.

El proyecto planteó la elaboración de una monografía de la localidad como base cronológica de la narración interpretativa posterior. La monografía integra los datos de la fundación del ejido, la vida de la hacienda antes de su disolución y las diversas etapas de la vida ejidal hasta la certificación agraria producto de las modificaciones constitucionales de 1922. Lo más importante es que culminó como una crónica desde dentro; es decir, de fuentes directas orales, sin que esto signifique la omisión de consulta de fuentes documentales primarias y secundarias.

Durante toda la investigación se hace uso de diversidad de métodos que corresponden a variadas disciplinas, sin embargo, predominaron los métodos de carácter cualitativo. El aparato crítico es fundamentalmente el derivado de la fenomenología: sociología comprensiva, antropología simbólica y psicología social constructivista. Y los instrumentos son derivados de los métodos etnográficos: observación etnográfica, entrevistas a profundidad, entrevistas abiertas y entrevistas semiestructuradas, así como historias de vida. Esto no significa que algunos planteamientos teórico-metodológicos de visión

estructural-cuantitativo los omitamos, sólo que estarán al servicio de las necesidades de la columna vertebrada, es decir, de los métodos cualitativos.

Un segundo proyecto es el denominado “Impulso y Estudio de la Memoria e Historia del Mundo de Vida Cotidiana de Tacoaleche, Guadalupe, Zacatecas; para vigorizar la identidad de esta región”

El lugar de acción es fundamentalmente la localidad de Tacoaleche, pero con la intención de extenderse a dos de las comunidades más representativas para tener una visión regional: El Bordo y Casa Blanca, Guadalupe, Zacatecas. Tacoaleche es actualmente una localidad mixta, cuenta con 6 771 habitantes, y toda su zona de influencia es rigurosamente rural. El territorio de influencia es de aproximadamente 373 Km<sup>2</sup> con un total de 15 comunidades. Esa región se divide en dos zonas: la zona que llamamos “A”, que es un conjunto de 7 comunidades que tiene como núcleo Casa Blanca; y la zona “B”, que son otras siete, con núcleo en El Bordo. La dispersión poblacional es mínima, por lo que se facilita el trabajo con visión regional. Casa Blanca tiene 1 062 y El Bordo 2 057 habitantes.

Son siete los aspectos que se consideran para la reconstrucción de la identidad de la región: la historia, la economía, la familia, la población, la organización social, la educación formal y la religión; estos ámbitos de la vida serán integrados de acuerdo a una comparación en tres períodos:  
antes de 1938. (1938 es el año de fundación del ejido)  
de 1938 a 1992. (Durante el ejido)  
de 1992 a la fecha. (Fin del ejido e inicio de una etapa)

La identidad se compone de diversos rubros que conforman la vida cotidiana de los habitantes de una región; como ya se mencionó, este proyecto rescata siete aspectos:

Fundación y reconstrucción general de la historia

El cultivo de la tierra, la producción material y el mundo del trabajo.

Familia y relaciones de parentesco: el cortejo, el matrimonio y vida doméstica.

La población: dinámica y tradiciones migratorias.

Organización y movimiento social.

La educación formal.

La religión: espacios sagrados, formas rituales, mitos articuladores, rituales de paso, del nacimiento a la muerte.

Para que el rescate de esos elementos perdure y sea posible su análisis permanente por los habitantes de la Región se culminará con a) el diseño de un museo de historia y memoria interactivo y, b) la propuesta de un Texto de Historia Local para educación básica.

Somos el grupo RUTa (Red de Universitarios de Tacoaleche) el encargado de recoger y sistematizar los saberes locales para luego regresarlos a la población:

El instrumento para recoger los datos serán técnicas etnográficas como la observación participante, entrevistas a profundidad e historias de vida; para sistematizar, transmitir y distribuir los datos y saberes, se utiliza la revista El Tlaco;

y para la asimilación y retroalimentación se realizarán talleres por barrio y sector tomando como base el contenido de la revista.

Como se observa, la iniciativa está dividida en diferentes etapas, y en cada una de ellas intervienen los distintos grupos de edad. En la etapa de recoger datos, la población que preferentemente participa es la de mayor edad; y en la etapa de divulgación y reflexión de los datos sistematizados, predomina la población joven y aun la infantil.

Del primer proyecto planteado ya se obtuvo el borrador la monografía siguiendo la metodología ya mencionada, el siguiente paso es la elaboración de un Libro de Texto de Historia Local dirigido a la primaria y secundaria del lugar.

Del segundo proyecto se ha obtenido el primero de los siete aspectos, el que se refiere a la historia del ejido de Tacoaleche con base en fuentes documentales primarias y secundarias, así como fuentes orales. Para cumplir con los objetivos planteados, a partir de febrero de 2005 el PEIDA fue el promotor de la unión de un grupo de universitarios en la comunidad, así se conformó la Red de Universitarios de Tacoaleche (RUTa). Este grupo ha sido tanto organizador como participante en la Primer y Segunda Semana Cultural en Tacoaleche, organizó los Jueves Culturales, comenzó con la publicación de la revista "El Tlaco" (de la que se tiene dos números) y, fueron impartidos cursos de verano a los niños de la comunidad.

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## COMERCIALIZACIÓN, AUTONOMÍA Y ECONOMÍA COMUNITARIA ALTERNATIVA

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DE ENTRADA...

El proceso de comercialización no se reduce a la venta de productos previamente generados, sino que es el pivote de salida de toda la actividad económica de la comunidad. No podemos ver por aparte la producción, la distribución y el consumo como si fueran compartimentos estancos, sino por el contrario, debemos visualizar la unidad indisoluble de todo el proceso económico; verlos separados –partiendo de que ya se tiene una producción previamente organizada y sólo resta encontrar la manera de colocar dicha producción en el mercado a un precio razonable, o a la inversa: producir y esperar hasta otro momento para resolver dónde y cómo se comercializará– va a generar siempre

problemas irresolubles por su daño de origen: la parcialidad de la óptica. Necesario es caer en la cuenta de que si hay problemas graves en la salida y colocación de los productos en el mercado, es porque previamente hay problemas en el diseño de la actividad económica en su totalidad. Así las cosas, elaborar un planteamiento para la comercialización quiere decir que se hará, en realidad, una propuesta para el sistema de toda la economía comunitaria en su conjunto. Continuar caminando sin asumir esta complejidad es precipitarse irremediablemente al fracaso.

DOS: DESDE DÓNDE

El modelo colonial-dominante en toda América Latina nos convirtió en economías monoproductoras de materias primas, dependientes del resto de los insumos con valor agregado. Situación que aun continúa: nuestras economías siguen siendo cuasicoloniales. Al concentrar la producción en uno o dos básicos bajo condiciones tecnológicas desiguales genera una competencia desventajosa que a su vez generará la paradoja de mateo: el que más tiene más recibe y el que menos tiene más se le quita; es decir, por efectos de la perecuación del valor al hacer mercado común con los gringos, terminamos regalándoles valor a los productores norteamericanos. Además, al producir uno o dos productos en grandes cantidades inundamos el mercado, contribuyendo así a la devastación de nuestra propia economía al poner los precios por debajo de los costos.

La salida que se oferte al problema de la comercialización depende, en mucho, del *desde dónde* se enfoque, enfoque ya sea determinado por la defensa de ciertos intereses o por equívocos involuntarios. Tradicionalmente tenemos dos ópticas: (1) la óptica liberal que centra sus intentos en el objetivo de hacer competitivos los productos en el gran mercado, y por ello, los políticos liberales suponen que no puede haber competitividad sino bajo el impulso del interés privado; por tanto, promueven la descomposición de la propiedad ejidal, privatizando la tierra y haciendo sobrevivir sólo a los que sean más aptos de adaptarse a los embates selváticos del mercado. Los proyectos de comercialización los enfocan desde aquí: hacen de la producción agropecuaria un cúmulo de empresas privadas y la norman en función de estudios de la demanda de un mercado despegado de las necesidades básicas. (2) la óptica del llamado Estado Benefactor se conduce por un paternalismo que fortalece los lazos de dependencia y retrasa el desarrollo de las comunidades. Es un esquema que aparentemente ayuda a los campesinos, pero el efecto real es la eliminación de las posibilidades de autonomía. El esquema de comercialización es el conocido modelo-conasupo.

Es evidente que no es deseable ni uno ni otro esquema. Entrarle al problema de la comercialización tomando el papel de distribuidores del monocultivo es como ser coyotes gratuitos que en nada cambia la situación estructural del problema, es decir, en nada coadyuva a una nueva orientación de la economía comunitaria. De la misma manera, no podemos tomar el rol de gatos

voluntarios del neoliberalismo: dedicarnos a hacer proyectos productivos que incentiven la empresa privada del campo, la hagan competitiva y se transforme a partir de su adaptación al gran mercado capitalista. En meros gestores de la 'productividad' campesina, de la 'modernización' del campo que no hace otra cosa que con-formar a éste en un espacio más del salvaje capitalismo neoliberal, y a nosotros por tanto, en ayudantes de portero de los grandes dueños del dinero; eso si, con una camiseta que dice: ¡viva la modernización!

En lugar de ello, debemos estar pensando en impulsar con creatividad un esquema de comercialización que se convierta en el chispazo de una vía alternativa de economía comunitaria, que se convierta en el pivote o detonante que desencadene una tendencia hacia la autonomía local, hacia la concreción de un modelo integral-autocentrado. El enfoque que norme y oriente la propuesta de comercialización la debemos tener muy clara para no resbalar y convertirnos en los conasupitos o los porteros arriba mencionados.

TRES: POR DÓNDE

La pregunta no es ¿cómo hacer para que las comunidades se adapten a las condiciones del gran mercado? Esto es, no pretender que el gran mercado es la imagen-objetivo de las economías comunitarias. Estamos convencidos que la vía del gran mercado no es la única, hay otras: las alternativas. Hay un camino propio. El neoliberalismo pretende que sólo hay *un* mercado y el camino que deben tomar *todos* para su 'progreso' es parecerse a ellos: ser empresarios capitalistas privados (o mano de obra barata).

El problema de la comercialización está en el centro del proyecto económico alternativo: un modelo integral-autocentrado [M(i-a)] de desarrollo comunitario. Integral implica que soluciones parciales o sucesivas no rompen con los círculos de la pobreza; autocentrado implica que la solución está en espacios menores a los nacionales, más cercanos a lo regional o local. El gran mercado *ya tiene dueño*; trabaja en función de reglas que nos son ajenas, por lo que siempre estaremos en desventaja. La salida está en la creación de mercados propios, alternativos al mercado neoliberal. El fin del proyecto económico alternativo no está centrado en los satisfactores ya ofertados sino en las necesidades de las personas en cuestión. La pregunta de qué producir dependerá de una anterior: qué necesitamos. El punto de partida es un análisis de las necesidades y los satisfactores-contrahegemónicos que se puedan utilizar. En suma, centrarse en el satisfactor y comercializar un solo producto es exactamente lo que impide el desarrollo de las comunidades. En cambio, concentrar las energías en la *integralidad* de las necesidades propias cambia por completo la propuesta de esquema de sistema económico.

El modelo integral-autocentrado implica necesariamente la construcción de la autonomía comunitaria, un desarrollo libre de la dependencia del gran mercado y centrado en el desarrollo no de una estructura tecno-económica, sino de la identidad de los pueblos. El M(i-a) implica que los pueblos somos capaces

de ser autosuficientes. Es decir, la autosuficiencia alimentaria y de reproducción de nuestra forma de vida es el requisito *sine qua non* para construir el desarrollo propio de las comunidades. Luego entonces, tenemos un faro para guiar la economía comunitaria: la autonomía entendida como 'desarrollo integral-autocentrado'. Aunque es importante aclarar que el M(i-a) va mucho más allá de la economía, ésta es sólo un rasgo que debe articularse con otras cinco dimensiones que atienden las necesidades no-económicas de la persona.

Para la economía clásica los factores del proceso productivo son tres: tierra, trabajo y capital. No toma en cuenta que la creación productiva es parte de la producción cultural, que la producción implica una forma de hacer las cosas, una manera de conformar la colectividad, que el consumo y los hábitos son parte de una forma de vida, que la producción es para reproducir no sólo la biología, sino la biografía de las personas y comunidades. Así pues, los factores de producción no sólo son tierra, trabajo y capital, sino también los objetivos compartidos que dan figura a la identidad de las comunidades. No omitamos que reproducir la vida es pensar en el futuro, y hacer eso es justamente proyectar y *crear* la identidad propia. Luego entonces, plantearse el asunto de la comercialización no es un asunto de mera colocación de productos en el gran mercado en el presente, sino de la configuración del futuro de las comunidades, de la construcción de su identidad colectiva.

Un esquema de comercialización pensado desde la economía comunitaria autónoma implica claridad en los requerimientos organizacionales necesarios. Aquí radica el nudo de la operación o ejecución del planteamiento. Configurar la economía comunitaria es sentar las bases para el autogobierno y el desarrollo autocentrado. Se requiere pensar en esquemas organizativos creativos y siempre AUTOGENERADOS, siempre desde dentro; de Impulsar el sentido de colectividad a través de estrategias efectivas de integración valoral y promover la planificación comunitaria a largo plazo. Diversificar las actividades económicas intensificando los intercambios intra e inter comunitarias, creando un verdadero mercado alternativo centrado en las necesidades y no en la pura tasa de ganancia, garantizando primero el autoconsumo integral antes que la venta externa.

#### CUATRO: CÓMO

Para la estrategia de intervención es imperioso lograr un equilibrio entre planificación autonómica y realismo económico; todo el excedente que se destine al mercado externo estará condicionado por precios que nadie de nosotros decide y condiciones de colocación que están fuera de nuestras manos controlar, de tal manera que conviene tener claridad de ese proceso mercadotécnico para esa parte del comercio. Asimismo, se requiere una estricta capacitación en administración y procesos económicos de todas las subunidades productivas que se generen. De igual forma, debemos lograr el equilibrio entre la fraternidad o solidaridad y lo jurídico, se debe contar con órdenes legales internos que nos

permita estar en condiciones de manejar todo tipo de conflicto o controversia que inevitablemente brote.

Antes de pasar al planteamiento de la etapas estratégico-concretas para aterrizar lo arriba mencionado, apuntaré cinco notas esenciales de formas de organización para la producción y comercialización: (1) varias y múltiples unidades pequeñas, (2) competencia interna, (3) La equidad (los recursos económicos generados por los excedentes en lugar de generar la acumulación privada deberán ser considerados para el uso público, de acuerdo a los principios de la justicia distributiva) (4) En el terreno agropecuario generar *modelos de producción integrados* entre agricultura, ganadería y silvicultura (GIA); priorizando las opciones orgánicas a las químicas (MIP) y alternativas intensivas (CST). (5) En la producción no centrarse sólo en productos tangibles, sino darle chance al los servicios. Sobre todo pensando en las personas que no son propietarios, y sólo tienen la renta de su fuerza de trabajo, como es el caso de los jornaleros. Porque pareciera que el asunto de la comercialización es para los previamente propietarios, cuando a los que son únicamente trabajadores, se les puede ofertar una opción de empresa comunitaria de servicios; v.gr. alguna versión del agroturismo. Además de diversificar no sólo al interior del sector primario, sino en los propios sectores: dinamizar el secundario y el terciario.

#### CINCO: APLICACIÓN

Con este marco de referencia iniciamos el trabajo con los productores en la formación de colectivos productivos, pero mientras invertíamos mucho tiempo en el trabajo con los adultos y sus múltiples fracturas históricas, los jóvenes seguían yéndose a Estados Unidos y la comunidad desfondándose. Así que decidimos cambiar de estrategia y centrar la atención en los jóvenes. Para ello, hicimos un primer proyecto de elaboración de pan proteinado con los jóvenes de la preparatoria rural, el cual ya se está comercializando a través de distribuidores directo al consumidor, lo cual nos permitirá ampliar la red de consumidores y generar alguna organización con los mismos. Hicimos también un experimento de distribución de frijol aprovechando las redes parroquiales, el cual fue exitoso. Ahora mismo estamos armando la multiplicación de colectivos con jóvenes de secundaria alrededor de un esquema de Granja Integral Autosuficiente.

Como se ve, para tener éxito en la iniciativa es necesario el concierto de varias instituciones y la población. Un convenio general entre la Universidad, la Telesecundaria y algunos organismos que son fuente de financiamiento puede acelerar el proceso de los objetivos planteados. Lo importante es que esos convenios salgan de abajo y adentro, y no sean una imposición burocrática de arriba.

Vale.

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## La Universidad Ante El Desarrollo Rural Comunitario

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### Uno: Despoblamiento y fragmentación

A partir de 1983 se impulsa el modelo exportador en México, y de entonces para acá, se instaura la estrategia neoliberal para el campo. Para los proyectistas del Estado existen tres tipos de productores: (a) los que son altamente productivos (y por ello entienden los que tienen capacidad de exportación); (b) los que tienen potencial productivo; y (c) los improductivos. Sus porcentajes son 15, 35 y 50% respectivamente. Con esta clasificación como base diseñaron su estrategia: hacer que los llamados 'improductivos' vendan la tierra y la adquieran aquellos que la hagan producir con fines de exportación. A este proceso de apropiación de la tierra por los grupos más adinerados le llamaron "compactación de tierras". Pero la mayor parte de la tierra clasificada como 'improductiva' era ejidal, y ésta era inalienable. Así que reformaron el artículo 27 constitucional en 1992, para hacer legalmente posible la venta de la tierra. Como se ve, el núcleo de la estrategia es la venta de la tierra. Por ello, las altas tasas migratorias por empobrecimiento de la población campesina, en lugar de ser un problema que deba eliminarse, para los estrategas neoliberales es, en este momento, un motivo de oportunidad para el avance de sus planes: el proceso de despoblamiento ayudaría a impulsar el traslado y compactación de la tierra. Es decir, la llamada 'modernización agrícola', para el Estado neoliberal, implica la descampesinización.

En general, el proceso que desencadenan los propósitos antes mencionados comprende cuatro fases:

Fragmentación,  
Despoblamiento  
Reestructuración  
Repoblamiento

En la región de Tacoaleche este proceso es ya manifiesto: en la década de 1980 al '90, la región, que suma 15 localidades, aumenta su población 15%, y la localidad 24%; en contraste con la tasa de -1.52% del estado en su conjunto. Pero el aumento de la población no se debe a la retención de la misma: entre 1990 y 1995, Tacoaleche tiene 17.13% de población migrante, y entre 1996 y el 2000 aumenta a 33.70%.<sup>1</sup> ¿Cómo puede aumentar la población al mismo tiempo que aumenta su

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<sup>1</sup> Cf. **El Tlaco**, Revista Independiente de la RUTa de Tacoaleche, Guadalupe Zacatecas, Num. 1, Octubre-  
Noviembre 2005, pp. 7-11; e *Ibid*, num. 2, pp. 26-30.



expulsión? Lo que explica esta aparente paradoja es la renta o venta de la tierra. La gente que emigra renta o vende la tierra y los nuevos dueños traen nueva población como jornaleros. Los efectos de este fenómeno son inmensos: es el cambio de la estructura económica de la región unido al desfundamiento de la identidad de la zona.

La segmentación ocurre como un proceso de aumento en la desigualdad de la población: el paso de relaciones de mayor igualdad en el ejido a relaciones de gran diferencia con la apropiación de la tierra. La fragmentación, en cambio, es la destrucción de los tejidos sociales que hacen posible la acción colectiva. La organización ejidal misma es desmontada porque ya se ha individualizado la propiedad de la tierra. Con la estrategia neoliberal ocurren ambas manifestaciones, la segmentación y la fragmentación.

El desarrollo entendido como autodesarrollo es posible si y sólo si existe acción colectiva. Pero el estado de fragmentación actual es justamente el desplome de ésta. Y no se ve que del Estado neoliberal vengan medidas que la impulsen; al contrario, todos sus programas para combatir la pobreza están diseñados con la teoría de la focalización; es decir, eligen individualmente a quienes ellos creen tiene el mérito para recibir un apoyo y sólo a esa persona se lo dan. Esto estimula aun más la fragmentación. Luego entonces, el diseño de los propios programas gubernamentales para atacar la pobreza son una fuente que impide el desarrollo de las comunidades.

## **Dos: Qué camino**

El sendero de la modernización es de pleno desastre. Las instituciones educativas en unión con la sociedad civil, debemos pensar un camino alternativo-alterno. Esta senda implica una suerte de investigación-intervención simultáneas alrededor de cuatro ejes de acción:

- reconstruir el tejido de la acción colectiva a través de formas organizativas que impulsen la reconstrucción de la base material y cultural del territorio.
- contener el alto flujo de expulsión de población, sobretodo la juvenil.
- conformar redes comunitarias extraterritoriales con la población residente en el extranjero; y
- lograr formas participativas y semidirectas en la autoplaneación del proceso de desarrollo en las comunidades rurales.

Para el primer objetivo se requiere, a su vez, contar con colectivos que movilicen las propuestas de reunión de la población alrededor de proyectos específicos.

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Estos colectivos deberán tener cuatro características: (i) integrados por personas de la misma región, no de fuera; (ii) debe manejar una serie de saberes, habilidades y capacidades diversas que requiere la región, es decir, el equipo debe estar profesionalizado con un perfil multidisciplinario; (iii) no deberá estar integrado en alguna dependencia gubernamental, sino que su estructura de acción deberá ser autónoma, y (iv) su misión central será desencadenar procesos de desarrollo autocentrado en las localidades rurales concretas.

La formación de estos equipos multidisciplinarios es el objetivo central del proyecto del PEIDA titulado "Universidad Rural Orgánica". En este momento el PEIDA se encuentra trabajando en la región de Tacoaleche, y en relación a este proyecto estamos ocupados en crear las condiciones de la misma: fundamos una preparatoria rural en la comunidad de Los Rancheros y elaboramos un proyecto de licenciatura en Ingeniería en Desarrollo Comunitario.

Para el segundo objetivo, tenemos una propuesta ya en fase experimental, que consiste en lo siguiente: el flujo más dinámico de migración son los jóvenes entre 15 y 22 años. Además, con un perfil de migración permanente. Pues bien, revisando la cobertura de la educación media básica (secundaria) de la población en sus respectivas edades, caímos en la cuenta que para el 2000 la cobertura llegó al 89.9%. Por tanto, los jóvenes que son potenciales migrantes, pasan los últimos tres años de su vida en la escuela secundaria. Es el momento y el lugar en el que se pueden emprender estrategias de contención: es el momento para crear expectativas económico-educativas para anclar a los jóvenes en la comunidad. La escuela ofrece la ventaja de ser un espacio de reunión diaria que posibilita la organización y el seguimiento de las iniciativas con los jóvenes. Con estas consideraciones entramos en relación con los profesores de la telesecundaria de Los Rancheros y les propusimos, junto a los padres de familia, un modelo de Granja Integral Autosuficiente, que viniera a sumarse al proyecto de pan proteinado que ya existe. El obstáculo más fuerte de esta vía es la inestabilidad de la permanencia de los docentes en las secundarias rurales, en ocasiones duran sólo un ciclo escolar. De tal manera que cuando está madurando un proyecto, los profesores se van y llegan nuevos. Eso debilita la propuesta. Por ello mismo, como no vemos factible que la SEC cambie su proceder administrativo al corto plazo, no hay otra solución que los mismos habitantes de la comunidad sean los que le den continuidad al proyecto, y para que ello sea posible deberán constituirse en un Consejo Comunitario de Educación, y contar con planes a mediano plazo que trasciendan el continuo flujo docente. Lo interesante de la iniciativa es que es perfectamente medible: se puede comparar el porcentaje de migración de jóvenes en las mismas edades antes y después de la iniciativa. Además, si logramos que se establezca el Consejo Comunitario de Educación, estaremos cubriendo el cuarto objetivo: las formas participativas de autoplaneación comunitaria.

La migración de Tacoaleche es mayoritariamente a Fort Worth, Texas; y la población de la región de Casablanca y Los Rancheros emigra a Tulsa Oklahoma. Para formar redes de comunidades extraterritoriales que propicien el financiamiento y comercialización, además de proyectos de reforzamiento de la identidad cultural, es necesario que previamente exista organización mínima en ambos lugares. Y en el caso de los migrantes que trabajan en Tulsa no tienen organización alguna. Es por ahí donde hay que iniciar el trabajo de este eje de acción, antes de pensar en cualquier otra cosa.

En suma, la Universidad Autónoma de Zacatecas deberá impulsar con decisión y tener éxito en el proyecto de Universidad Rural Orgánica.

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## EL GARBANZO DE TEMPORAL UNA ALTERNATIVA PARA ZACATECAS

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El problema principal de los productores de frijol en México es la comercialización y los bajos precios de sus productos, lo que ha traído como consecuencias la descapitalización y en muchos casos la venta de sus tierras. Este trabajo de investigación aplicada, se estableció en el ambiente árido templado, ya que es en esa zona, donde se presentan las condiciones agroclimáticas favorables para este cultivo. El objetivo de este estudio fue determinar el potencial productivo del garbanzo bajo condiciones de temporal y transitar hacia la reconversión productiva en la región frijolera del estado de Zacatecas. Se utilizaron los genotipos de garbanzo: Blanco Sinaloa 92, Garbanza y forrajero criollo, con labranza mecanizada, en dos ambientes agroclimáticos ubicados en los municipios de Saín Alto y Sombrerete. La siembra de garbanzo se realizó el 7 de julio del 2006, utilizando 50 kg de semilla para cada cultivar de garbanzo, la cual fue inoculada con una cepa específica para el cultivo a base de *Rhizobium* y con una separación entre surcos de 82 cm. La fertilización al momento de la siembra fue a base de 50 kg/ha de urea y 50 kg/ha de 18-46-00. Con el nivel tecnológico utilizado y considerando las condiciones climatológicas del 2006, se tuvo un rendimiento de garbanzo blanco Sinaloa 92 de 629 kg/ha de grano de buena calidad; 988 kg de garbanza y de 1350 kg/ha del garbanzo forrajero. Se concluye que si existen las condiciones agroclimáticas apropiadas para la siembra de este cultivo en las zonas semiáridas y que el cultivo de garbanzo es rentable.

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## Plantas De Bio-Diesel Y Tratadoras de Agua: Intercambio UAZ-UNT)

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Objetivo: Tras una visita a las instalaciones de una planta de bio-diesel y de aguas tratadas en el Área de Dentón, TX un grupo de Estudiantes de la UAZ tuvimos la oportunidad de conocer como es que el interés en la recuperación de medios para reestablecer un vinculo mas aceptable con el medio ecológico que nos rodea. Dadas esta visita se nos puso a consideración la permisibilidad de llevar al cabo proyectos similares desde la perspectiva de las necesidades de nuestras propias comunidades en Zacatecas. La Presentación tiene como objetivo dar a conocer este tipo de plantas en el área del estado, su funcionalidad, ventajas y desventajas, así como su utilidad práctica y económica . Esta presentación estará conducida por parte de los miembros que asistieron el pasado mes de julio a la Universidad Del Norte De Texas en donde tuvo la oportunidad de participar dentro de las actividades de un curso de verano impartido por el Ph.D Stan Eigman en lo relativo a Desarrollo sustentable y energías alternativas.

Contenidos de la Presentacion:

### **A) Plantas de Bio-diesel**

- Lanfill y gas metano
- Medios de obtención

### **B) Plantas tratadoras de Agua**

- Importancia del agua
- Proceso
- Recuperación en las vertientes naturales (Ríos, lagos y lagunas)

### **C) Compostas Resultantes**

- Tratamiento de residuos sólidos
- Ventajas de uso
- Ventajas comerciales

FORO VISIÓN MUNDIAL DE LAGOS, Construyendo un Plan de Acción para la Cuenca Lerma-Chapala.

3 de noviembre de 2006.

Ajijic, Jalisco CP 45920.

Mesa Tematica

Mesa 1. Uso Optimo del Agua.

Mesa 2. Prevencion y Control de la Contaminacion del Agua.

Mesa 3. Conservacion y Manejo de la Biodiversidad.

Mesa 4. Participacion Social en el Manejo de la Cuenca.

Mesa 5. Monitoreo y Evaluacion del Lago y su Cuenca.

Mesa 6. Mecanismos y Estrategias Sustentables de Manejo.