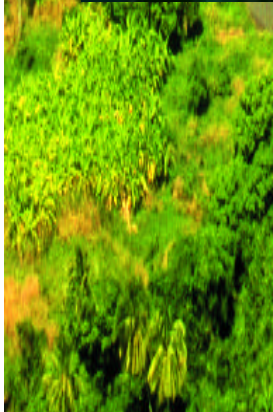


INICIATIVA DE AGUA Y NATURALEZA *Estrategia y Proyectos de UICN para* **MESOAMERICA**

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1. Introducción

En Marzo del 2000, la Unión Mundial para la Naturaleza (UICN) presentó la "*Visión de Agua y Naturaleza: Un Marco para la Acción*". Este trabajo es el eje ambiental de la Visión Mundial del Agua. En él se define un nuevo paradigma que señala el rumbo que debe tomar la humanidad durante los próximos 25 años para garantizar el desarrollo sostenible y la conservación de los recursos hídricos.

Para llegar a esa meta debe implementarse el Manejo Integrado de los Recursos Hídricos (MIRH) utilizando una perspectiva de ecosistemas dentro de cuencas hidrográficas. Esto requerirá que aprendamos a cuidar nuestro mundo de agua, un mundo donde los recursos hídricos no serán sobre-explotados ni desperdiciados, sino más bien conservados y restaurados para el bien de los ecosistemas y la humanidad. El desarrollo y la conservación de la naturaleza no son contrincantes, sino más bien compañeros que deben formar alianzas estratégicas para crear un mundo donde los recursos hídricos son aprovechados de forma sostenible.

1.1 De la Visión a la Acción

Para evolucionar de los principios y conceptos de la *Visión* a acciones concretas, la UICN desarrolló la *Iniciativa de Agua y Naturaleza*. La *Iniciativa* entonces sirve como el plan de ejecución de la *Visión* en el ámbito global, e incluye actividades puntuales en regiones geográficas específicas.

Con el fin de establecer ese mundo de agua sostenible, el Marco de Acción de Agua y Naturaleza estableció seis metas principales:

- Proteger los hábitat de agua dulce críticos y sus especies a través del uso sostenible del agua y el suelo, y también a través del control de la contaminación del agua proveniente de actividades agrícolas, industriales, y domésticas;
- Dar poder a grupos locales para que desarrollen prácticas responsables para el uso del agua y para que obtengan acceso equitativo al agua de tal forma que se respete a los ecosistemas como un igual;
- Promover voluntad política y buen gobierno para evitar y mitigar conflictos, y para fomentar colaboración y consenso entre los participantes a través de una participación bien informada;
- Incorporar los valores económicos, ecológicos, culturales e intrínsecos de los ecosistemas en la toma de decisiones y el manejo de los recursos hídricos, usando medidas innovadoras e incentivos financieros y legales;
- Utilizar y desarrollar la información y el conocimiento científico y autóctono para mejorar el manejo del agua dulce y los ecosistemas relacionados;
- Crear conciencia en las personas sobre el papel de los ecosistemas en la protección y el uso sostenible del agua, y fortalecer la capacidad humana para cambiar el comportamiento de tal forma que respete y sea compatible con la naturaleza.

Estos objetivos no son una receta fija, sino más bien sirven como una guía para la búsqueda del cambio. Las diferentes naciones, gentes, culturas e instituciones tendrán que usar distintas acciones para lograr las metas esperadas. La riqueza, calidad de vida, y condiciones ambientales varían alrededor del planeta, y cambian

continuamente. Por esto las metas sólo describen las áreas de trabajo en forma general. Cada individuo, institución y país deberá interpretar y adaptar las metas de acuerdo a sus necesidades, capacidades, y oportunidades locales.

1.2 La UICN Responde

La *Iniciativa de Agua y Naturaleza* de UICN responde a los retos y propuestas para pasar de la visión a la acción, haciendo que sea un mecanismo efectivo para confrontar la crisis mundial del agua. Esta crisis aglomera las necesidades de comunidades en todo el mundo. Por lo tanto, esta propuesta confrontará las necesidades de las comunidades y de los ecosistemas en que esas personas dependen.

La *Iniciativa de Agua y Naturaleza* es la respuesta de UICN a múltiples llamados para pasar de la Visión a la Acción. La *Iniciativa* responde a muchos de los retos y propuestas de acción definidos en la Declaración Ministerial de la Haya, el Informe de la Comisión Mundial del Agua en el Siglo XXI, el Marco de Acción del Global Water Partnership, y el Informe Final de la Comisión Mundial de Represas. Como tal, la *Iniciativa* es una respuesta muy a tiempo que da seguimiento activo a un proceso participativo que tuvo lugar de 1997-2000. Al construir las propuestas en los resultados de estos procesos, la *Iniciativa* contribuye a concretar las Visiones de Agua y Seguridad en el Siglo XXI.

2. La Iniciativa de Agua y Naturaleza: Meta y Objetivos

Las actividades en Mesoamérica estarán enmarcadas dentro de la meta principal de la *Iniciativa*, que es desarrollar e implementar el manejo de ecosistemas en las cuencas hidrográficas. Para llegar a esa meta, se desarrollaron seis objetivos:

- #1- Demostrar el **MANEJO DE ECOSISTEMAS EN CUENCAS HIDROGRAFICAS**; para demostrar que las cuencas pueden ser mejor manejadas desde una perspectiva de ecosistemas
- #2- **DOTAR DE PODER A LAS PERSONAS** para que establezcan una utilización participativa, equitativa y responsable del agua;
- #3- **PROMOVER LA GOBERNABILIDAD Y LA VOLUNTAD** para facilitar la utilización razonable del agua y prevenir conflictos por la misma;
- #4- Desarrollar y aplicar **HERRAMIENTAS ECONOMICAS Y FINANCIERAS** que promuevan el buen manejo del recurso hídrico
- #5- Crear y **COMPARTIR EL CONOCIMIENTO** y la tecnología para mejorar el manejo de los recursos hídricos.
- #6- **ESTRUCTURAR EL APRENDIZAJE**, para crear conciencia sobre el buen manejo del agua.

Toda acción llevada a cabo dentro de la Iniciativa encaja dentro del programa global. Para esto, se han elaborado mecanismos de retroalimentación e intercambio de información entre los varios proyectos en todo el mundo. Tales actividades permitirán maximizar el aprendizaje acumulado en las experiencias de los diferentes sitios. A la vez, le da más peso a cada proyecto dado a que todos forman parte de un paquete mayor pero con una meta en común.

3. Principios de la Iniciativa de Agua y Naturaleza

Para la ejecución de la *Iniciativa*, se han identificado varios principios que deben regir el programa. Estos deben guiar el desarrollo, la selección e implementación de los proyectos. Los principios escogidos son:

- **Participativo**

La participación de los diferentes grupos con sus variadas perspectivas da oportunidad a que se desarrolle un mejor y más amplio manejo de los recursos naturales. A la vez, el incluir las perspectivas locales y regionales hace que la Iniciativa pueda ser ajustada de acuerdo a los diferentes contextos geográficos y culturales.
- **Estratégico**

El reemplazar las funciones y servicios que brindan los ecosistemas naturales implica un altísimo costo. Por lo tanto se considera una decisión estratégica el evitar llegar al punto en que la degradación de los ecosistemas hace necesarias altas inversiones para restaurar las funciones perdidas. A la vez, la Iniciativa debe ser estratégica al hacer que sus actividades encajen dentro de las iniciativas regionales que ya se están llevando a cabo.
- **Transparente**

La *Iniciativa* establecerá un sistema de manejo transparente para la implementación de sus proyectos. Por ejemplo, estas actividades incluyen la conformación de un Comité Asesor externo que supervisará las actividades.
- **Catalítico**

Dado a que la Iniciativa representa un paquete de proyectos bajo una Visión, pero de una duración y con recursos limitados, se enfocarán los esfuerzos en aquellas actividades que sirvan como catalizadores para acciones a futuro. Por esta razón también es importante sincronizar esfuerzos en el ámbito regional con las demás actividades que se llevan a cabo.
- **Aprendizaje**

Varios componentes de la Iniciativa están enfocados al aprendizaje sistematizado de las experiencias que se van acumulando y generando en los diferentes proyectos. Esto también implica el incorporar el aprendizaje y las experiencias regionales. El objetivo es que luego se diseminen las lecciones aprendidas para magnificar los resultados del aprendizaje.

4. Descripción de la Estrategia para Mesoamérica

4.1 Antecedentes de los recursos hídricos en Mesoamérica

Mesoamérica es una región privilegiada en cuanto a sus recursos hídricos. Lamentablemente, esta riqueza se ve constantemente amenazada debido al mal manejo del agua, su sobre-explotación, y su degradación. A la vez existen factores locales que hacen crítica la situación en algunas zonas. Como ejemplo está la dispar distribución del agua y la población, dado a que la mayoría de las personas viven en la vertiente Pacífica, cuando es en el Caribe donde se encuentra la mayor riqueza hídrica.

Complican la situación las inadecuadas políticas y acciones relacionadas al agua, las cuales han dirigido sus esfuerzos principalmente a cubrir la demanda del recurso por las poblaciones humanas. Dentro de este esquema no se ha contemplado el desgaste ambiental y económico en que incurre la sociedad para ofrecer el servicio. El resultado es que muchos de los ecosistemas han sido severamente degradados, a tal punto que pierden la capacidad de brindar los bienes y servicios; con sus respectivas consecuencias para las poblaciones humanas y los mismos ecosistemas.

Centroamérica cubre un área de 532,857 km², de la que 57% se ubica dentro de cuencas transfronterizas y en la que se encuentra el 7% de la biodiversidad del planeta

La problemática que afecta esa relación entre el agua, las poblaciones humanas y la naturaleza en Mesoamérica, se debe en su mayor parte a la falta de un manejo

integral de los recursos hídricos basado en conocimientos sólidos y que tome en cuenta a todos los grupos involucrados. Esto no permite que los afectados participen en el proceso de toma de decisiones

Adicionalmente otros factores que afectan al sector hídrico regional son:

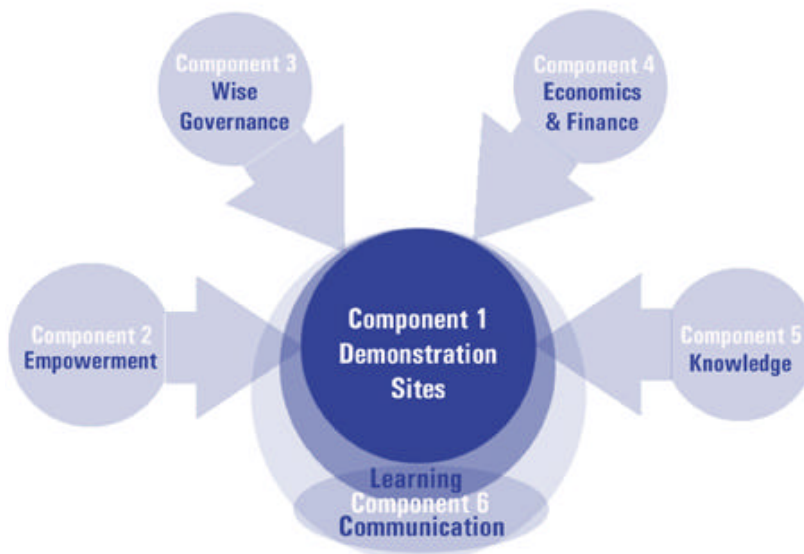
- Un marco legal fragmentado y en algunos casos anticuado
- Utilización del recurso sin aplicar un concepto de ecosistemas, que promueve la solidaridad entre usuarios y tomar en cuenta a los ecosistemas como usuarios del agua
- Visión no integrada del manejo del recurso a nivel sectorial y de cuenca
- No existe suficiente conocimiento de la situación real del agua en la región
- Falta la participación de las poblaciones locales afectadas directamente por la toma de decisiones

Dentro de esta problemática se han ido gestando algunas posibles soluciones. Por ejemplo, ya existen algunas iniciativas de diversas instituciones que quieren mejorar el manejo integrado del recurso agua. Algunas son a nivel regional como el Plan Centroamericano para el Manejo del Agua (PACADIRH) y las actividades del Global Water Partnership. Otros son en el ámbito nacional como el Plan de Acción para la Gestión Integrada de los Recursos Hídricos en El Salvador. Como parte de las posibles soluciones, la *Iniciativa de Agua y Naturaleza* busca integrarse y aportar a estos procesos ya existentes sin duplicar esfuerzos. En este sentido, la perspectiva ecosistémica para el manejo de las cuencas hidrográficas es uno de los principales aportes de la *Iniciativa* y la *Visión*.

4.2 La Iniciativa en Mesoamérica

La *Iniciativa* propone acciones concretas para atender la problemática del agua. Mesoamérica es una de las regiones clave donde se llevará a cabo su implementación en los próximos años. Para ello, la Oficina Regional para Mesoamérica (ORMA) de la UICN estará desarrollando y ejecutando el componente Mesoamericano de la *Iniciativa* en conjunto con otras instituciones de la región.

El principal punto de acción regional de la *Iniciativa* se enfocará en dar apoyo y coordinar con comunidades y organizaciones locales el manejo integrado de los recursos hídricos en microcuencas. Existen muchas instituciones base que ya han demostrado



su interés en velar por el manejo adecuado del agua del que dependen. La *Iniciativa* daría un valioso aporte para trabajar en conjunto con las bases en el buen manejo, lo que a la vez serviría para fortalecer la capacidad de gestión y participación local. La UICN está muy bien posicionada para desarrollar estos proyectos dada su capacidad de aglomerar a distintos actores y de facilitar procesos a múltiples niveles.

La principal estrategia para llegar a las metas de la Iniciativa, será utilizar sitios demostrativos donde se pueda ejemplificar el buen manejo de los recursos hídricos utilizando la perspectiva ecosistémica. Estos sitios serán parte de un conjunto a nivel mundial que permitirá el aprendizaje en conjunto y el intercambio de experiencias.

Esquema preliminar del proceso de desarrollo para los proyectos demostrativos

Todos los proyectos demostrativos usarán un mecanismo similar para su diseño e implementación. Los siguientes ocho pasos caracterizan los elementos de este mecanismo. Los pasos no seguirán necesariamente el orden secuencial en que se presentan ya que pueden superponerse en el tiempo.

Paso 1. Diseño del proyecto. Se lleva a cabo un análisis y una evaluación preliminar de las amenazas y oportunidades en la cuenca o microcuenca. Éste se utiliza para definir, en conjunto con los interesados, la meta, los objetivos, y las principales actividades del proyecto demostrativo. El área del proyecto se escoge en esta etapa.

Paso 2. Auditoría de la cuenca. Una auditoría detalla se lleva a cabo, incluyendo un análisis sobre las principales tendencias, presiones, condiciones, impactos, y respuestas, usando un conjunto de indicadores ambientales, sociales, y económicos. La valoración económica y el análisis de estrategias de vida son parte de la auditoría. Basado en los resultados de la auditoría, se hace una descripción preliminar que servirá como base para el proceso de planificación.

Paso 3. Foro de la cuenca. Se establecen mecanismos para la participación efectiva y activa de los principales involucrados en la planificación y manejo de la cuenca. Estos mecanismos se basan en las estructuras locales ya existentes y acrecienta la capacidad de participación de los grupos vulnerables, principalmente las mujeres.

Paso 4. Planificación conjunta. Se monta un proceso informado de planificación participativa y toma de decisiones, donde se definen las metas, objetivos, y acciones para la cuenca. Se desarrollan y consensúan un plan maestro de manejo en la cuenca y una estrategia para la acción. El plan integrado se basa en el análisis de diferentes escenarios, evaluación de impactos, y diálogos en la cuenca.

Paso 5. Acciones rápidas. Intervenciones directas en el campo se implementan para resolver problemas críticos o para demostrar las alternativas para el uso sostenible de los recursos. Las actividades se enfocan especialmente en proteger o restaurar los bienes y servicios de la cuenca. Para ganar confianza y fuerza, las acciones locales se toman temprano en el proyecto mientras el proceso de planificación en la cuenca se está llevando a cabo.

Paso 6. Implementación. Se usan intervenciones legales y de manejo específicas para implementar el manejo de la estrategia. El financiamiento sostenible de esta fase es un elemento esencial de estrategia completa del proyecto, y alianzas público-privadas se promueven para este fin. La implementación de sistemas justos de incentivos se apoya.

Paso 7. Verificación de cumplimiento. Durante la implementación, se desarrollan mecanismos para verificar el cumplimiento con las acciones y metas acordadas por parte de los actores en la cuenca. Se hacen auditorías constantes de la cuenca para informar al foro de cuenca sobre el progreso y cumplimiento.

Paso 8. Adaptación al cambio. Basado en el monitoreo y la evaluación de los logros, y la comunicación de lecciones aprendidas, se ajustan el plan de manejo y las acciones a las circunstancias cambiantes cuando se requiera. Un proceso estructurado de ajustes es parte de la estrategia de manejo de la cuenca.

El enfoque de la estrategia para Mesoamérica está enmarcado de acuerdo con la estructura global de la *Iniciativa*:

4.2.1 Demostrar el Enfoque de Ecosistemas en el Manejo de Cuencas Hidrográficas

El manejo de los recursos de los suelos y las aguas está estrechamente relacionado. No se puede manejar un recurso sin que afecte al otro de forma directa o indirecta. Ésta interdependencia hace que sea vital la integración de la planificación y el aprovechamiento de los recursos en toda una cuenca. Se escoge la unidad de cuenca o microcuenca dado a que el agua es lo que une al sistema, ya sea escurriendo por el suelo, el sub-suelo, o en el cauce de los ríos. Por lo tanto, la *Iniciativa* promueve el manejo integrado de recursos hídricos a través del manejo de los ecosistemas que se encuentran en las cuencas y microcuencas. Las actividades de este componente se enfocarán a probar y desarrollar el manejo de ecosistemas dentro de cuencas específicas que servirán como estudios de caso o sitios demostrativos.

En Mesoamérica hay una gran necesidad de generar buenas experiencias en el manejo de ecosistemas en cuencas. En la actualidad son limitadas las experiencias que hayan utilizado la perspectiva de ecosistema.

El Enfoque de Ecosistemas

La estrategia de Manejo de Ecosistemas busca el manejo integrado de los recursos vivos terrestres y acuáticos, de tal forma que promueva la conservación y el uso sostenible en una forma equitativa. Llenar las necesidades de las personas es un componente central de la estrategia ecosistémica, el cual busca:

- Mantener las funciones y servicios del ecosistema
- Mejorar la distribución de los beneficios en forma equitativa
- Promover estrategias de manejo adaptivo
- Implementar acciones de manejo descentralizado
- Estimular la cooperación inter-sectorial e interdisciplinaria

Algunas de las actividades propuestas son:

- Establecer un sitio demostrativo en la cuenca del río Tacaná, compartido entre México y Guatemala
- Usar la cuenca del Lago Güija en El Salvador y Guatemala como sitio demostrativo del manejo integrado de los recursos hídricos

4.2.2 Dotar de poder a las personas para que participen en el manejo sostenible del agua

La familia es la unidad básica para el manejo sostenible de los recursos hídricos. Muchas familias dependen directamente de los recursos naturales para su subsistencia. Si lo que se busca es el manejo sostenible del agua, entonces hay que fomentar la sostenibilidad de la subsistencia. Dentro de esta perspectiva, la conservación de los recursos naturales deja de ser un “lujo” y pasa a ser una estrategia de supervivencia. Para buscar la sostenibilidad de la subsistencia, la *Iniciativa* propone dotar de poder a los grupos locales, lo que permitiría un acceso más equitativo a los recursos y un mejor proceso de toma de decisiones por esos grupos locales.

En Centroamérica viven 35 millones de habitantes de los que:

- **70% vive en la pobreza**
 - **50% reside en zonas urbanas**
 - **40% son menores de 14 años**
 - **33% no tienen abastecimiento de agua potable**
 - **y la población crece 3.5% / año**
-

Algunas de las actividades propuestas son:

- Apoyar a grupos locales para que elaboren propuestas concretas que busquen satisfacer los bienes y servicios hídricos que demandan de los ecosistemas y que forman parte integral de los sistemas de subsistencia

- Promover la participación informada y activa en los procesos de decisión relacionados a los proyectos de infraestructura propuestos en la cuenca del Canal de Panamá
- Elaborar herramientas para la participación de grupos locales en las decisiones que afectan a las cuencas
- Desarrollar un paquete de herramientas para el manejo integrado de recursos hídricos y para la autoevaluación en microcuencas
- Catalizar el movimiento de personas e instituciones hacia la conservación de los bosques nubosos en las partes altas de las cuencas

4.2.3 Promover la gobernabilidad y la voluntad política para los recursos hídricos y los humedales

Para el buen manejo de los recursos hídricos, es esencial contar con un sistema legal efectivo y con un esquema institucional integrado. Hasta el momento, es frecuente encontrar marcos legales que ven el recurso agua de forma fragmentada o que cuentan con políticas conflictivas sobre un mismo recurso. La *Iniciativa de Agua y Naturaleza* enfocará sus esfuerzos en este campo para integrar las implicaciones ambientales dentro de las políticas nacionales y regionales que tienen que ver con los recursos hídricos. La *Iniciativa* también apoyará la implementación de mejores políticas de agua ligadas a otras políticas y estrategias de recursos naturales (ej. biodiversidad, humedales). En este aspecto, es importante que los diálogos nacionales que definen las nuevas políticas de agua involucren a los múltiples grupos de la sociedad.

La *Iniciativa* apoyará y colaborará con otras actividades que se están llevando a cabo en la región, tales como el Plan Centroamericano del Agua, las políticas de humedales, las actividades del Global Water Partnership, etc. Con el afán de integrar esfuerzos, la *Iniciativa* buscará permear la perspectiva de ecosistemas a los esfuerzos actuales.

Algunas de las actividades propuestas son:

- Fortalecimiento de las bases legales e institucionales para el manejo sostenible del agua en la región

4.2.4 Desarrollar y aplicar herramientas económico-financieras que promuevan el buen manejo del recurso hídrico

Los ecosistemas juegan un papel importante en el ciclo hidrológico, y proveen una gama de bienes y servicios tales como mantener la calidad del agua o contribuir a mitigar las inundaciones. Esos bienes y servicios tienen gran valor económico y muchas veces es más barato que los ecosistemas los provean versus otras alternativas estructurales o de restauración. La *Iniciativa* atenderá los aspectos económicos del manejo del agua al desarrollar herramientas de análisis. Estas herramientas se enfocarán en la valoración de los bienes y servicios de los ecosistemas y en la implementación de incentivos y medidas económico-financieras que reduzcan la degradación de los recursos hídricos.

Algunos países en Mesoamérica han sido pioneros en el campo de aplicar esquemas económicos para la valoración y el intercambio de pagos por los servicios ambientales de los ecosistemas. Casi todos los esquemas han estado enfocados en promover la cobertura boscosa como uso del suelo preferido. Aún falta mucho por hacer y la mayoría de los países aún no valoran adecuadamente los recursos. Las relaciones claras entre los ecosistemas y sus funciones hidrológicas, al igual que la importancia del agua para los ecosistemas, todavía no se han esclarecido en la región.

Algunas de las actividades propuestas son:

- Integrar el valor económico de los humedales al manejo de las cuencas
- Valorar económicamente los servicios ambientales hidrológicos que provee la cuenca del Canal de Panamá

4.2.5 Crear y compartir conocimientos para mejorar y apoyar la toma de decisiones

Es esencial conocer bien un ecosistema si el objetivo es manejarlo de forma sostenible. De otro modo es imposible diseñar el aprovechamiento del recurso para permitir su renovación en el largo plazo y evitar la degradación del recurso. Ese conocimiento básico de los ecosistemas se encuentra incompleto en muchos sitios o está disponible sólo en lenguaje técnico y poco accesible al público. El resultado es que las decisiones que se toman no están bien fundamentadas en el entendimiento del funcionamiento de los ecosistemas, lo que resulta en la acelerada degradación de los recursos. La *Iniciativa* apoyará el desarrollo de sistemas de apoyo a las decisiones (SAD) para cuencas a escala regional. Esto se hará en colaboración con otras iniciativas existentes.

Dado a que el agua integra el paisaje y todo lo que en él sucede, muy frecuentemente queda ausente la integración de los conocimientos a nivel de cuenca. La información que existe es poca, y la que sí está disponible no se ha integrado a nivel de cuenca o no es accesible a la mayoría de la gente. Si se toma en cuenta que el 57% del territorio Centroamericano se encuentra dentro de una cuenca compartida entre dos o más países, se evidencia el gran valor de compartir e intercambiar información para llegar a un mejor manejo del recurso agua.

Algunas de las actividades propuestas son:

- Establecer un “clearinghouse” o centro de información sobre el agua y el género, dado a que las mujeres juegan un papel clave en el uso del recurso y por lo tanto pueden llegar a ser actores esenciales en conseguir su buen manejo
- Desarrollar criterios sobre biodiversidad acuática para mejorar el diseño de estrategias para su manejo sostenible. Tales criterios permiten un monitoreo más práctico que suplirá de información a los tomadores de decisiones a toda escala
- Elaboración de un atlas electrónico sobre los recursos hídricos y los humedales que estaría disponible a través de la internet
- Colaborar con el establecimiento y mantenimiento de redes locales, especialmente de gente y organizaciones que están trabajando en el manejo de recursos hídricos a nivel local y otras instituciones que promueven este tipo de iniciativas

4.2.6 Estructurar el aprendizaje para crear conciencia sobre el buen manejo del agua

La *Iniciativa* está estructurada para crear las condiciones apropiadas para promover el manejo integrado de los ecosistemas y el agua en los procesos de toma de decisiones y planificación de los recursos en las cuencas. Pero dado que las condiciones son tan variadas en las diferentes regiones geográficas, es necesario identificar cuáles mecanismos funcionan mejor en los diferentes contextos. Por lo tanto, la *Iniciativa* desarrollará un mecanismo de retroalimentación, monitoreo, y evaluación, que permita maximizar el proceso de aprendizaje. Esto hará más efectivo el extraer lecciones valiosas que luego pueden ser diseminadas en las regiones geográficas de influencia. Esta comunicación es básica para promover el cambio en los diferentes niveles.

Algunas de las actividades propuestas son:

- Recopilación de las lecciones aprendidas de los sitios demostrativos, las cuales serán intercambiadas con otros sitios en las diferentes partes del mundo
- Comunicación interna (dentro de UICN) y externa sobre las experiencias generadas en todos los proyectos y campos de la *Iniciativa* a nivel mundial

- Estructurar la información generada de tal forma que permita difundir las lecciones aprendidas y constituirse en elemento multiplicador de experiencias

5. Coordinación y Manejo en la Región

Dado a que la *Iniciativa* es un programa global con componentes regionales y proyectos en sitios específicos, se identificaron tres niveles para su manejo y coordinación: 1) asesoría, 2) coordinación, e 3) implementación.

Nivel 1 - Asesoría

En el ámbito global, un Comité Directivo y el Conservation Network Group (CNG) de la UICN serán el ente asesor del equipo de coordinación. El Comité Directivo (CD) ayudará a establecer lazos con otras actividades que se llevan a cabo simultáneamente, sobre todo en el área de Manejo Integrado de Recursos Hídricos. Dentro de los miembros del CD estarán un representante del DGIS, GEF, GWP, y la UICN, y también cuatro representantes regionales.

El papel fundamental del CD será dar asesoría de alto nivel en temas técnicos considerados de importancia crítica y establecer lazos con otras actividades en el campo del agua que se estén llevando a cabo a nivel global y regional. Los socios internacionales de la *Iniciativa* en el campo de la conservación jugarán un papel fundamental en actividades donde sus conocimientos y especialidades complementen y fortalezcan a la *Iniciativa*

A nivel regional, se nombrará un Comité Técnico Asesor (CTA) para Mesoamérica. Estará compuesto por 5 miembros de la región que representen diferentes perspectivas sobre el manejo de los recursos hídricos. El CTA se reunirá dos veces por año en conjunto con el equipo de coordinación regional. Su principal función será orientar al equipo de coordinación en la implementación de la *Iniciativa* en Mesoamérica. Además, el CTA actuará como un ente asesor en aspectos técnicos de los proyectos, al mismo tiempo que ayudará a establecer lazos con instituciones y proyectos de la región.

Nivel 2 – Coordinación

Habrará un equipo de coordinación global basado en la sede de UICN al mismo tiempo que equipos de coordinación en cada una de las regiones con proyectos. En Mesoamérica, el coordinador(a) del Equipo de Coordinación Regional (ECR) será la persona encargada del Programa de Humedales de la UICN-Mesoamérica. El coordinador(a) estará apoyado por dos asistentes técnicos y un equipo administrativo básico.

El ECR toma las decisiones estratégicas con respecto al desarrollo e implementación de la *Iniciativa* en la región. Tendrá la responsabilidad de vigilar la calidad técnica de todos los proyectos de campo. El ECR contará con el apoyo del CC a nivel global y el CTA a nivel regional, al igual que con el equipo de coordinación global.

El coordinador será el responsable de actuar como enlace entre las acciones regionales y las globales. El coordinador suplirá insumos a nivel global para intercambiar experiencias y lecciones aprendidas. Al mismo tiempo, el ECR deberá hacerse cargo de coordinar el monitoreo, la supervisión, y la evaluación del programa regional.

Nivel 3 - Implementación

El ECR será responsable de la implementación y coordinación de los proyectos en la región. Para los sitios demostrativos, se designará un director de proyecto que se hará cargo de la implementación. El o ella estará en contacto directo conforme sea necesario con el ECR. En todos los casos los proyectos en sitios demostrativos se implementarán en alianza con organizaciones locales, entes gubernamentales y con el apoyo de consultores. Para los proyectos que no son en áreas demostrativas sino más bien regionales, el ECR tendrá la responsabilidad de vigilar su ejecución satisfactoria a través de consultorías y alianzas estratégicas con las organizaciones regionales y nacionales.

“Todos los sectores de la sociedad deben unirse en la formulación de la Visión del Agua y la Naturaleza. No puede ser hecha por los gobiernos solos, las ONG’s solas o por profesionales y grupos de ciudadanas y ciudadanos solos.”
Sir Martin Holdgate

6. Socios Potenciales

La *Iniciativa de Agua y Naturaleza* es un esfuerzo colaborativo entre múltiples instituciones de diferente nivel; desde organizaciones comunales hasta agencias mundiales. En la región Mesoamericana se han identificado varios socios potenciales que en conjunto colaborarán para hacer posible la implementación de la *Iniciativa* en la región.

6.1 A nivel nacional

Los socios potenciales a nivel variarán de acuerdo a los componentes que se ejecuten en cada país al igual que a las necesidades y condiciones específicas de cada nación. Algunos de los principales actores clave que se han identificado por el momento son los ministerios de ambiente, los comités de miembros de UICN, organizaciones no gubernamentales y comunales, en algunos casos empresas eléctricas o de riego, gobiernos municipales y empresas del sector privado.

6.2 En la región Mesoamericana

Mesoamérica cuenta con varias instituciones involucradas en el tema del agua directa o indirectamente y que actúan a nivel regional. Dentro de éstas se han identificado socios potenciales clave tales como el Global Water Partnership-CATAC, la Comisión Centroamericana de Ambiente y Desarrollo (CCAD) del SICA, el Grupo Consultivo del Agua en conjunto con el Comité Regional de Recursos Hidráulicos (CRRH), el CATHALAC, y las 6 comisiones de UICN en la región (sobrevivencia de especies, áreas protegidas, derecho ambiental, políticas, gestión de ecosistemas, educación y comunicación).

6.3 A escala mundial

Similar a los entes regionales, hay actores en la escala mundial que juegan un papel clave en los recursos hídricos de la región ya sea directa o indirectamente. También están las agencias de cooperación y los donantes internacionales. De previo se han identificado las siguientes instituciones como socios potenciales: DGIS, NORAD, DANIDA, SIDA, DFID, GEF, AEI, Comisión Mundial de Represas, Consejo Mundial del Agua, COSUDE, USAID, el Banco Mundial, y el Banco de Desarrollo Interamericano.

7. Monitoreo y Evaluación

El componente de monitoreo y evaluación permite una comparación periódica de los resultados y los impactos esperados con los obtenidos, permitiendo así medir el desempeño de las labores realizadas de tal forma que sirva como un insumo en el manejo adaptivo de los proyectos. Para esto, el monitoreo es fundamental ya que permite recolectar información regularmente la cual es analizada para garantizar una

clara rendición de cuentas y que puede ser aprovechada para resumir las lecciones aprendidas del proceso. La estrategia mundial de la *Iniciativa* ha definido de forma previa las preguntas claves que los programas de monitoreo y evaluación deben de responder periódicamente.

El ECR realizará una autoevaluación semestral de la ejecución de la *Iniciativa* en la región con el fin de verificar los avances y dificultades según los resultados e indicadores del Marco Lógico que se establecerán.

Anualmente se hará un resumen de los resultados del monitoreo y evaluación, y la información generada será utilizada constantemente en la toma de decisiones de los proyectos. Habrá una evaluación externa a la mitad del proceso de la *Iniciativa*.

El sistema de evaluación y monitoreo servirá como la base para el aprendizaje estructurado de las lecciones aprendidas en toda la *Iniciativa*.

8. Presupuesto y Financiamiento

Dentro de los 28 perfiles de proyecto propuestos por la *Iniciativa* a nivel global, 5 se desarrollarán en Mesoamérica. Los proyectos son de variada duración, desde 18 meses hasta 4 años. El presupuesto para esos 5 primeros proyectos se estima en US\$6.150.000 a través de los 5 años de la *Iniciativa*. Para estos perfiles ya se han establecido contactos con donantes internacionales de los cuales varios han expresado interés en colaborar con la *Iniciativa*. Hay otros 5 perfiles de proyectos elaborados para la región con un costo estimado de US\$6.600.000.

El sistema de manejo financiero de la UICN liga los fondos directamente con los proyectos. Este sistema permite un manejo claro, eficiente y transparente a todos los niveles del programa. Al mismo tiempo, se hacen informes financieros anuales para toda la *Iniciativa*, incluyendo estados de cuenta. La distribución de fondos para proyectos y para elaborar los informes se hace en forma anual, y la liberación de fondos se condiciona a la satisfactoriedad de los informes sobre implementación del proyecto.

En total se cuenta con 10 perfiles de proyecto para Mesoamérica con una inversión estimada de US\$12.750.000. Hay que agregarle a esto la inversión en el equipo de coordinación regional que se estima en US\$1,300,000 para el periodo de 5 años. Este monto incluye un 10% de tasa de administración (overhead) al igual que un 10% de recursos que se destinan a un fondo de imprevistos.

9. Factibilidad y Sostenibilidad

La *Iniciativa de Agua y Naturaleza* es un reto ambicioso para responder a la crisis mundial del agua. Pero la magnitud del reto se debe a la seriedad de la situación en que se encuentran los recursos hídricos, lo que exige una alta inversión de parte de todos. La UICN está decidida a tomar el reto de desarrollar y coordinar el programa de la *Iniciativa* para convertirlo en un éxito. La estructura particular de la UICN, donde se agrupan entes gubernamentales y no-gubernamentales para trabajar juntos y en conjunto con redes internacionales de expertos en temas sociales, económicos, políticos, legales, educacionales, y científicos, permite los enlaces, y los conocimientos requeridos para cumplir con la misión de la *Iniciativa*. Durante sus más de cuatro décadas de existencia, la UICN ha demostrado tener la habilidad de liderar el pensamiento estratégico a nivel global, regional y nacional, con una gran capacidad de

reunir a diversos actores para facilitar diálogos que ejerzan influencia sobre las acciones y promueva la resolución de conflictos.

En Mesoamérica, la Oficina Regional para Mesoamérica (ORMA) de la UICN cuenta con una red de más de 50 organizaciones gubernamentales y no-gubernamentales de la región. Durante los 90's, ORMA-UICN se posicionó como una institución líder en la región en el campo ambiental. La experiencia en el área de humedales, bosques, y zonas costeras, habiendo manejado múltiples proyectos en la región, serán de gran utilidad para la coordinación de la *Iniciativa* en la región. ORMA-UICN, en conjunto con varias organizaciones regionales y locales, jugó un papel prominente en visualizar la problemática del agua en Mesoamérica. Ese contacto y coordinación con otras instituciones ha permitido que se tenga ya mucho interés en desarrollar los sitios demostrativos de la *Iniciativa*. El éxito y la sostenibilidad en el tiempo de los sitios demostrativos dependerá en gran parte de que el personal involucre a los actores locales y gubernamentales en el buen manejo del agua utilizando la perspectiva de ecosistemas.

“No podemos competir con la Naturaleza; no podemos ni siquiera controlarla. Sin embargo, podemos trabajar con ella, en conjunto, para realizar nuestro sueño de agua limpia, ecosistemas saludables y sociedades prósperas para todas las personas del planeta”
Reina Noor de Jordania

Durante cinco años, la *Iniciativa* producirá una serie de herramientas y productos para mejorar el manejo de cuencas en la región. Para que éstas sean utilizadas e implementadas, deben ser producto de un proceso participativo y adecuado a la realidad local. Simultáneamente tiene que haber una fase de diseminación en que se refuerce la capacidad a nivel local, y nacional para facilitar el uso de los productos que surjan de la *Iniciativa*. Tiene que desarrollarse una masa crítica de personas e instituciones que se involucren en el manejo de las cuencas de tal forma que las actividades coordinadas perduren por más tiempo que la duración de los proyectos.

ANEXO I: PERFILES DE PROPUESTAS PARA MESOAMERICA

10. Annex I: Executive Summary

The IUCN Water and Nature Initiative is a collaborative effort of over 50 organizations world-wide to address the water crisis and particularly the issues defined during the process that led to the 2nd World Water Forum in The Hague in March 2000. The Initiative builds on the Water and Nature Vision and Framework for Action, and aims at developing and implementing actions within river basins at local, national, regional and global levels.

The goal of the Initiative is to contribute towards building a world in which the benefits of freshwater and related ecosystems to humankind are optimized, while the intrinsic values of these systems are respected and preserved. In this world, the mutual dependence of people and ecosystems is accepted, and unavoidable loss of ecosystems' functions and biodiversity is more than compensated through ecosystem restoration.

The objectives of the Initiative are:

- To demonstrate ecosystem management in river basins;
- To empower people to participate in sustainable water management;
- To support wise governance of water resources and wetlands;
- To develop and apply economic tools and incentives;
- To improve knowledge to support decision making;
- To learn lessons to raise awareness on wise water use.

Within the Global Water and Nature Initiative, 28 projects have been pre-selected for implementation in the coming 5 years. The projects have emerged from a bottom-up process of consultation within IUCN members and partners in several regions including Central America, Africa, the Mediterranean and South East Asia, and at the global level. This process was initiated during and after the 2nd World Water Forum to allow those already involved in the process to team up with those not involved so far, to ensure that the latter would contribute to bringing forward ideas to address the main issues defined. The involvement of constituencies represented in the Global Water Partnership (GWP) at global and regional levels has been, and will be playing a major role in the development and implementation of the Initiative.

The Initiative will be participatory, strategic, transparent, catalytic, and learning oriented. A Co-ordination Team, consisting of IUCN coordinators, will be advised by an external Steering Committee and the internal IUCN Conservation Network Group. Overall co-ordination will be with the IUCN Wetlands and Water Resources Programme (IUCN HQ). Essential to the Initiative is the development of a learning approach through a monitoring and evaluation system. This will allow the Initiative partners to draw lessons that can be communicated to other constituencies. The internal communication and dissemination of key messages will be supported by a communication strategy that is amongst others aimed at delivering products to the Rio+10 and the 3rd World Water Forum and Ministerial Conference.

11. Project Profiles for Mesoamérica

For each of the six component of the Initiative there are a series of specific projects. Of the 28 projects identified within the Global Initiative, 5 are for specific sites or issues in the Mesoamerican region. In addition to these 5 projects, a series of other profiles have been developed locally to further elaborate the various components of the Initiative. Table 1 provides a summary of the project profiles that have been identified for

Mesoamerica. All profiles are attached in this document according to the component of the Initiative under which it falls under.

Table 1. Budget and Duration of Projects Specific to Mesoamerica

Component	Project	Country	Budget	Duration
#1- Demonstrating Ecosystem Management in River Basins	Integrated Management and Conservation of the Lake Güija Basin	El Salvador	\$2,500,000	4 years
#1- Demonstrating Ecosystem Management in River Basins	Conservation and Sustainable Management of the Tacaná River Basin	Mexico, Guatemala	\$2,500,000	4 years
#1- Demonstrating Ecosystem Management in River Basins	Integrated management and rehabilitation of Laguna Llanos del Espino sub-catchment	El Salvador	\$450,000	24 months
#1- Demonstrating Ecosystem Management in River Basins	Integrated catchment management to maintain the basis for sustainable water supplies for people and ecological services	El Salvador	\$2,500,000	4 years
#2- Empowering People	Public participation and environmental impact mitigation of infrastructure development in the extended Panama Canal Basin	Panama	\$300,000	2 years
#3- Wise Governance	Legal and Institutional Foundations for Sustainable Management of Water Resources in Central America	Central America	\$600,000	2 years
#4- Economics & Finance	Economic valuation of environmental services and small scale incentives within the Panama canal basin	Panama	\$250,000	18 months
#5- Creating & Sharing Knowledge	Assessment of freshwater biological diversity in Central America and conservation priority definition	Central America	\$3,000,000	3 years
#5- Creating & Sharing Knowledge	Water, food and environmental security in Central America – defining common ground	Central America	\$500,000	18 months
#6- Structured Learning	Network Learning in the Central American Water and Nature Initiative	Central America	\$150,000	2 years

COMPONENT 1

11.1 DEMONSTRATING ECOSYSTEM MANAGEMENT IN RIVER BASINS

Integrated management and conservation of the lake Güija basin
(Guatemala, El Salvador)

Conservation and sustainable management of the Tacaná river basin
(Mexico, Guatemala)

Integrated management and rehabilitation of Laguna Llanos del
Espino sub-catchment
(El Salvador)

Integrated catchment management to maintain the basis for sustainable water
supplies for people and ecological services (El Salvador)

11.1.1 INTEGRATED MANAGEMENT AND CONSERVATION OF THE LAKE GÜIJA BASIN (GUATEMALA, EL SALVADOR)

Rising pressures in an area of great hydrological importance for El Salvador...

The San Diego-La Barra Forest protected area, along with the lake complex of Güija, Metapán and Santa Clara (Lake Güija basin), is an area of significant importance for natural and cultural resources in the western part of El Salvador. Located in the department of Santa Ana near the Guatemalan border, the lake Güija basin contains the country's remaining remnant of dry tropical forest, with a wealth of biological and archaeological diversity. Communities within the area depend on the goods and environmental services provided by the protected areas and the lake to maintain their livelihoods.

Lake Güija is the largest body of water in the basin, with a surface area of 49 km², part of which is located in Guatemalan territory. The Lake Güija basin extends approximately 2,560 square kilometers, with the rivers Angue, Ostúa and Cusmapa as main tributaries. These rivers flow into the Desague River, which joins with the Lempa River in El Salvador. The system is surrounded by mountain chains containing the Montecristo National Park covered with cloud forest at altitudes between 800 and 2418 m.a.s.l., the San Diego-La Barra forest, and Los Volcanes complex.

Because some of the country's most severe droughts occur in this zone, Lake Güija is used as a regulating reservoir (Guajoyo dam) to maintain flow in the Lempa River during critical periods. Around the lake and throughout basin, communities' livelihoods are based on subsistence agriculture and small-scale fishing. Most of the inhabitants depend directly on Lake Güija and the other bodies of water for their domestic and productive activities. In the zone there are 16 local development organizations, and although efforts are currently being made to conserve this important natural system, reality shows that the hydrological system is continuing to deteriorate due to damages caused by forest fires, deforestation and extraction of firewood, poaching, unregulated fishing and pollution from dumping of domestic waste and pesticides. It is evident that if this situation continues, water quality and quantity, as well as associated resources will be seriously impacted.

Great potential for integrated management of water resources...

The lake Güija basin is an area with great potential and importance for the development of conservation and sustainable development projects with an ecosystem approach. Despite the problems and threats in this area, there are strengths and opportunities to train communities and implement development and conservation projects. Organization in some of the communities is good, with some 20 development associations that are consolidated. The zone also has great potential for ecotourism development, which is still unexplored and untapped except for some local and sporadic visits, especially during the Easter holidays. Certain specific conservation and development activities are being developed by NGOs in the zone. These mainly consist of providing opportunities for non-traditional productive projects, training in disaster management, natural resource protection, water management and waste management. The challenge in the basin is to bring these efforts together and establish mechanisms for efficient co-ordination among the organizations working there. Government agencies in both El Salvador and Guatemala are to be involved within the framework of a management plan.

Goal

Water and other natural resources in the Lake Güija Basin are conserved and sustainably managed for the benefit of the people and the maintenance of natural ecosystems and biodiversity.

Objectives

- To develop a mechanism for co-ordination among all stakeholders working in the basin;
- To enhance local capacity for sound water use in the area through training and raising of awareness;
- To prepare a basin wide audit and design and implement a comprehensive management plan for the basin;
- Identify and execute key demonstration activities to improve water and associated resources, and contribute to protection of biodiversity;

Products

- An awareness campaign targeted at local actors;
- A structure for co-ordination and operations among stakeholders;
- Training events on integrated management of water resources;
- A basin-wide audit to substantiate the development of a management plan;
- A comprehensive management plan for the basin, based on broad consultation and participation of stakeholders;
- Specific actions for protection and sound use of water resources in the basin, with measurable improvement in the quality and quantity of the resource.

Description

The first year of the project will concentrate on strengthening alliances among the different organizations focusing on involving local and national governments and NGOs in both Guatemala and El Salvador. A strategic alliance will be established with the Lempa River Watershed Management Project. Furthermore a basin-wide audit will be carried out together with an assessment of the needs and capacities of local organizations regarding management of water and hydrological resources. An appraisal will be made of training needs in the areas of resource management and development. The basin wide audit will build strongly on the on work already initiated by the NGOs in the area.

During the second year an awareness campaign will be developed regarding the importance of water and other associated resources. A special emphasis will be placed on the ecological services provided by the cloud forest in the Montecristo National Park. During the second and third year, the project co-ordination group will develop a management plan, supported by project personnel and staff from the different NGOs and government agencies working in the area. A broad-based process of consultation and participation will be carried out for the preparation of this plan, involving all the main local actors in both El Salvador and Guatemala. In the third year an action plan will be prepared with the local population in order to operationalize the main actions contained in the plan. The plan will also include investment priorities and financing mechanisms for projects with the communities involved in both countries.

During the fourth year, the management and action plan will be further operationalized. Actions will be initiated to improve both the quality of natural resources in the basin, along with the quality of life for area residents through, for example, ecotourism projects, environmental services, management of water sources, and production of compost using water plants.

IUCN's Potential partners

Ministry of the Environment and Natural Resources of El Salvador (MARN), the Secretariat of the Environment of Guatemala, Centro para Protección Contra Desastres (CEPRODE), Centro Nacional de Tecnología Agropecuaria y Forestal

(CENTA), Dirección de Desarrollo Comunal (DIDECO), Metapán Municipal Government, Asociación Salvadoreña Pro-Salud Rural (ASAPROSAR), Asociación Trifinio para el Desarrollo Sostenible (ATRIDEST), and Asociaciones Locales de Desarrollo (ADESCO).

Duration

4 years

Budget

US\$ 2,500,000

11.1.2 CONSERVATION AND SUSTAINABLE MANAGEMENT OF THE TACANÁ RIVER BASIN (MEXICO, GUATEMALA)

A strategic zone to develop and conserve...

The Tacaná Volcano area, is renowned for its high economic and productive potential, its great biological diversity, and complex ethnic and social dynamics. The main rivers in the basin, the Coatán, Suchiate and Naranjo, together form the most important zones for water production in both Guatemala and Mexico. Located on the Pacific slope along the border between Mexico and Guatemala and rising up to 4,000 m.a.s.l., the 600,000-hectare zone is distributed equally between the two countries and has a precipitation ranging from 1500 to 5000 mm/year. The area's total biodiversity is representative of one of the most important "hot spots" on earth with a considerable number of species increasingly threatened with extinction.

The Tacaná river basin provides essential goods and environmental services that form the natural assets of the livelihoods of over 1.5 million people living in some 30 municipalities throughout the basin. A limited number of livelihood strategies are used, including farming, keeping livestock and commercial (coffee) agriculture, wage laboring inside and outside the region and craft and tourism related activities. The region contains the major coffee-producing areas of both countries and is renown for the production of biological coffee. The increasing population is however causing a rapid augmentation of the pressures on natural resources. Increasing natural disasters, deforestation of upper basin slopes, bad land husbandry, unsustainable coffee plantation practices and overgrazing threaten the security in the entire basin. The unbound development of extensive and intensive farming practices contribute largely to increasing the vulnerability of livelihoods by eroding their natural asset base. Sedimentation, pollution and loss of riverine habitats are some of the immediate consequences the basin population is faced with. If unbound degradation will rapidly continue over the next decade.

Social demand to fight poverty and improve quality of life in harmony with nature...

Throughout the basin there is a high demand of inhabitants for assistance to prevent deterioration, promote improved planning and management and restore degraded slopes and river stretches. Though existing ecological reserves in both countries still support the main meteo-hydrological characteristics of the basin, the extensive and intensive farming activities that threaten these urgently need to be addressed. Due to all its characteristics, the Tacaná basin is considered as providing a golden opportunity to establish a precedent in promoting sustainable development. A range of organizations (communities, municipalities and national governments) have indicated their interest in actively participating in working towards a sustainable management of the basin. The experiences that exist in parts of the basin with sustainable land and water management practices are a valuable asset for any future basin wide management.

What is currently needed is a twinning of basin wide stakeholder involvement in planning and management with the development of a selected number of demonstration sites where sustainable practices are taking place or are to be developed. This will allow the establishment of a wide awareness raising and capacity building effort throughout the basin. Based on a thorough basin-wide assessment with full public and institutional support, a master plan and management plan for the basin is to be developed. Only these combined efforts are likely to result in an improvement on the ground in the basin.

Goal

Water and other natural resources in the Tacaná basin are conserved and sustainably managed for the benefit of the people and the maintenance of natural ecosystems and biodiversity.

Objectives

- To build the capacities of local organizations for sustainable management of resources in the watershed through establishing education and a culture of sustainable management;
- To support the development of a baseline audit and a basin wide management plan with full participation of all stakeholders;
- To promote environmental management and compliance with regulations on the basis engagement of local authorities and communities;
- To implement demonstration activities on adequate water management;
- To support the establishment of financing mechanisms for sustainable basin-wide use.

Outputs

- A comprehensive database for ecological land use planning, a GIS and risk / vulnerability maps;
- Events and materials to strengthen community organization's and local authorities' capacities;
- A review of land and water regulations in the basin and proposals for adaptations to promote sustainable use and conservation;
- Successful field activities demonstrating sustainable management of natural resources including forest restoration, agroforestry, organic coffee-producing areas, ecotourism, diversification of productive activities;
- Economic instruments for appropriate environmental management of the basin;
- A comprehensive plan for integrated management of water and land in the basin, including an action plan to improve environmental management.

Description

During the first year, the project will concentrate on carrying out a basin-wide audit focusing on developing a natural resources base-lines, risk/vulnerability maps and a livelihoods analysis. Contacts will be made with local and national authorities and actors at the different levels. The main potentialities and needs of local organizations (including the municipalities) with respect to sustainable water management will be identified together with a diagnostic of training needs regarding natural resource management.

During the second year, a campaign will be developed to raise awareness of the importance of water and other resources associated with the basin, including special events and training sessions. A program for the monitoring of key indicators for 'basin-health' will be established with the participation of all stakeholders. Demonstration activities for the improvement of the management of natural resources will be identified and initiated together with the municipalities including field level soil and water conservation, forest restoration, organic coffee production, improvement of agroforestry and ecotourism development. A consultative and participatory process will be initiated to prepare the comprehensive plan for sustainable use and management of water in the basin involving all main stakeholders in both Mexico and Guatemala. A catalogue for sustainable use of the natural resources will also be produced.

During the fourth year decentralization will be achieved to strengthen the capacity of local authorities in environmental management. Economic instruments for adequate environmental management in the region will be generated including, for example,

payments for environmental services, carbon certificates, organic quality certification, and strengthening of markets within the basin. The comprehensive plan for sustainable use and management of the basin including its water resources will be available, along with the action plan. Finally, an information dissemination and communication strategy for the management plan and plans of action will be implemented, accompanied by the strengthening of the medium- and long-term financing strategy.

IUCN's Potential partners

Municipalities and NGOs in the basin, members of IUCN National Committees / IUCN Members in Mexico and Guatemala, SEMARNAP, SEMARN, CONAP (Mexico), CONAP (Guatemala), SERNYP (Chiapas), INAB, CONAMA, MAGA, SAGAR, Conservation Studies Centre, CECON-USAC, Universidad del Valle, Colegio de la Frontera Sur, Universidad Autónoma de Chiapas.

Duration: 4 years

Budget: US\$ 2,500,000

11.1.3 INTEGRATED MANAGEMENT AND REHABILITATION OF LAGUNA LLANOS DEL ESPINO SUB-CATCHMENT (EL SALVADOR)

Competing uses of a limited resources...

The Laguna Llanos del Espino basin (Province of Ahuachapan) forms a small (15 km²) sub-catchment within the Rio Paz catchment. The water from the surrounding catchment drains directly to the lake that is disconnected from the main river. The catchment is intensively used for agricultural purposes including maize and sugar cane. An estimated 800 people live within the local drainage basin and these depend directly on the quality of the basin and the lake for their livelihood.

Currently the over-exploitation of the basin's water resources, the pollution of the lake within nutrients and heavy metals and the increasing spread of water-hyacinth are threatening the basis of existence for all people in the area. The introduction of tilapia has caused the loss of many endemic fish species in the lake according to local fishermen.

During the last decade the lake has been reduced by more than 40% to 0.6 km². Over-abstraction for irrigation and domestic use are the main causes for the decline in lake levels. The inhabitants consider the discharge of pesticides and herbicides and untreated domestic effluents to cause a high concentrations of contaminants in the lake waters. To date, no analysis have however been carried out to confirm this. However, it is clear that all discharge ends up in the lake as no natural spillway into the Rio Paz exists. Drinking water quality has been significantly effected by the deterioration of the lake water quality and a sharp increase in water related deceases is reported by the local inhabitants.

Willingness to react to combat over exploitation and protect water resources...

The current state of the Laguna Llanos del Espino forms a clear example of a situation where various water users have to collaborate to develop a sustainable management of their common resource base. Most inhabitants depend directly on the quality of the lake and the basin. This forms a clear incentive to consider investing in the reduction of pollution and the rehabilitation of the lake water resources. Improvement of drinking water quality, for example, will benefit all people. Other improvements, such as reduction in water hyacinth and recovery of traditional lake levels, will benefit some but will require a change in water use and waste water treatment by many others.

The inhabitants around the lake have requested support to improve the conditions of the lake and the water resources in the basin. They have recognized the need to quantify the current lake conditions and define actions to combat the further degradation of their common natural resource base. The rehabilitation of the lake will require a catchment wide ecosystem management approach that focuses on reducing the inputs of contaminants, reduction to the water use to sustainable levels, and improving the aquatic habitat conditions in the lake and surrounding wetlands. The establishment of an appropriate management structure and development and implementation of management tools are further essential to enable the rehabilitation and sustainable management of the lake and its catchment.

Goal

Rehabilitation of Laguna Llanos del Espino and the sustainable management of water and land resources within its entire catchment basin.

Objectives

- Assessment of status, critical threats and rehabilitation opportunities to define basis for management plan and interventions;

- Strengthen capacity of local NGO and user group for improved basin and lake management;
- Develop a management plan for the basin and lake and codes of conduct for specific user group;
- Start with implementing the management plan with key actions and using additional innovative financing mechanisms where appropriate.

Outputs

- Assessment and monitoring report for the basin and the lake
- Management plan for the basin and lake based on wide consultation
- Codes of conduct for specific user groups agreed by members of these groups
- Measurable improvement of lake water quality

Description

During the first 6 months the project will focus on a survey of the environmental and socio-economic conditions within the lake basin. Use will be made of Rapid Rural Appraisals, interviews with all stakeholder groups representatives, and various field survey techniques including for example: surface and groundwater sampling and chemical analysis, topographical survey and biological inventories. This work will be finalized by the presentation of a comprehensive report containing the information base for developing the management plan.

Between 6 and 18 months the project will develop a lake basin management structure that builds on and strengthens existing institutions within the basin. This work will include setting-up user groups, such as fishermen, pastoralist, farmers that will start discussing how their group can contribute to improve the lake conditions. Technical support to these discussions will be provided by the project staff. The management plan will be developed by representatives of the local inhabitants with assistance of the project staff. An implementation strategy will also be developed that will build on defining new mechanisms for financing the rehabilitation of the lake, such as local water tax, penalties for untreated effluents and water use rights restrictions.

Between 12 and 24 months some targeted management activities will be started including the reduction and treatment of effluents, the removal of water hyacinth, and the reduction of water abstractions. These activities will be additional to the small scale activities that will start early on in the project focused on addressing some of the most urgent needs related to water management. For many of the activities additional resources will be sought from provincial and national authorities.

Potential partners

IUCN The World Conservation Union, Ministerio de Medio Ambiente y Recursos Naturales (MARN), Ministerio Agricultura y Ganaderia (MAG), AINDECO (local associations of basin communities)

Duration

24 months

Budget

US\$ 450,000

11.1.4 INTEGRATED CATCHMENT MANAGEMENT TO MAINTAIN THE BASIS FOR SUSTAINABLE WATER SUPPLIES FOR PEOPLE AND ECOLOGICAL SERVICES (EL SALVADOR)

A highly sensitive area...

With a rainfall regime of 1000 mm annually, the low lying areas in the western part of El Salvador (Province of Ahuachapan and Sonsonate) can be considered as one of the driest areas of the country. The hydrographical region 'Cara Sucia – San Pedro' with a total surface area of ca. 600 km² is often recognized as one of the most sensitive areas in the country. Consisting of several sub-catchments (Rio El Sacramento, San Francisco, La Palma, Cara Sucia, Agua Chappio, Guayapa, El Naranjo, El Rosario, Copinulo, San Pedro) the hydrographical unit discharges only 5 m³/s on average. As such the area has the most restricted water resources of El Salvador. The area is characterized by volcanic soils, sediment deposits at lower elevations and a steep topography rising from sea level to 1800 meter over less than 25 km.

The province covers three main life zones: Humid Tropical Forests, Dry Tropical Forests, and Mangroves all containing a rich biological diversity. The rich biological diversity found in the national park of 'El Imposible' is some of the best conserved of Central America. Outside this protected area the steep slopes are partially covered by 'cafe con sombra' agroforestry systems. In the coastal zone extensive mangroves exist which consist of primary forests and forests rehabilitated after hurricane damage in the 1980s. The conservation of tropical mountain cloud forest at the higher elevation of the Cordillera de Apaneca (1816 m.a.s.l.), the mangroves near Barra de Santiago and the agroforestry systems form key-elements of natural resource management in the hydrological unit. Although the area lies in the zone that was heavily impacted by Mitch, relatively little negative effects were recorded. This indicates that the natural resources management is very effective and could function as a model for other areas.

Needing integrated catchment management...

Some concerns have recently been raised about the unsustainability of agricultural and fishing practices in the area. Shrimp fishing is currently practiced year round without a seasonal fishing stop. Agricultural practices in the area between the national park 'El Imposible' and the proposed Ramsar-site 'Cara de Sucio - Barra de Santiago' are increasingly causing soil erosion and a further loss of biological diversity. Furthermore, urban developments around San Jose El Naranjo, Jujutla and Guaymango as well as in numerous small villages are affecting the freshwater resources in the area through discharge of untreated wastewaters.

To counter these threats improved management of the hydrological unit is needed. This could entail the establishment of well targeted biological corridors within and between the various life zones especially focused on maintaining freshwater biodiversity. At more local levels, it could require specific actions such as reduction of untreated effluents, rehabilitation of eroded areas, establishment of river riparian management zones and implementation of a fishing closed season. The development of these activities should however be based on the development of a hydrological unit management plan that draws from the lessons learned in the entire unit and aims at coordinating the activities of the various actors within the various catchments.

Currently no co-ordination within the entire hydrological unit of 'Cara Sucia – San Pedro' exists. The lack of coordination forms one of the institutional obstacles to improved management of the hydrological unit and conservation of its rich biodiversity. Various organizations have expressed their interest in becoming involved in the project including the Ministerio de Medio Ambiente y Recursos Naturales (MARN), Fundacion

de los amigos del árbol (AMAR), Salvanatura (other names of organizations working in the area to be added).

Goal

The protection and sustainable management of the natural resources within the 'Cara Sucia – San Pedro' hydrological unit.

Objective

- Develop local capacity for improved water management including training and awareness raising;
- Develop a co-ordination of organizations and institutions involved in natural resource use in the 'Cara Sucia – San Pedro' hydrological unit to improve its water resources management;
- Develop and start implementing a management plan for the 'Cara Sucia – San Pedro' hydrological unit;
- Define and carry out key-interventions within the hydrological unit to enhance ecosystem services improve water quality and protect biological diversity.

Outputs

- A campaign to raise the awareness of local stakeholders for improved water management;
- A series of training sessions on integrated water resources management in the hydrological unit;
- A co-ordination structure for the integrated management of the water resources in the 'Cara Sucia – San Pedro' hydrological unit;
- An integrated water resources management plan based on an ecosystem approach for the 'Cara Sucia – San Pedro' hydrological unit;
- A series of site specific interventions to protect and improve water availability, water quality and biological diversity.

Description

During the first year the project will focus on building alliances between various organizations that are currently working in the hydrological unit. A awareness campaign will further be developed to create a better understanding of the water dependencies that exist between the various parts of the hydrological unit. The development of this campaign will be based on the preliminary surveys and assessments that will be carried out within the catchment. Individuals from key stakeholder groups will receive training in key elements of integrated water resources management. These individuals will form a core group from which a preliminary co-ordination group for the hydrological unit will be formed. Furthermore, immediate and urgent needs with respect to water management will be identified in the hydrological unit using Rapid Appraisal techniques within both rural and urban areas. Several basic monitoring units will be installed where needed.

During the second and third year the co-ordination group will develop the management plan, supported by the project staff. This support will entail both technical support including surveys, data gathering and data analysis and presentation and support to the management of the co-ordination group. A wide consultation within the unit will be set up to allow input from all stakeholders. Local level interventions will be defined and carried out to alleviate immediate needs. At the end of the second year, all information required for the management plan will be available. The third year will focus on defining the details of the management plan together with a business plan for its operationalization. This will include the definition of local and basin wide conservation and development investment priorities and mechanism for financing. Specific emphasis

will be placed on cost recovery, payment of environmental services and innovative sustainable financing mechanism where appropriate.

During the fourth year, a start will be made with implementation of key interventions to improve the water resources management in the hydrological unit. This will include for example rehabilitation of degraded areas that are key to sustainable water resources management, measures to control discharge of untreated effluents, and soil erosion control.

Potential partners

IUCN – The World Conservation Union, Ministerio de Medio Ambiente y Recursos Naturales (MARN), Fundacion de los amigos del arbol (AMAR), Salvanatura (other names of organizations working in the area to be added)

Duration

4 years

Budget

US\$ 2,500,000

COMPONENT 2

11.2 EMPOWERING PEOPLE

Public participation and mitigation of infrastructure development in the
Panama canal basin
(Panama)

11.2.1 Public participation and environmental impact mitigation of infrastructure development in the extended Panama Canal BASIN

Keeping the Panama canal functioning needs more water...

In September 1999, the delineation of the Panama Canal watershed was legally defined in Panamanian law. With the hand over of authority from the United States to Panama, the Panamanian government and the Panama Canal Authority (PCA) are now responsible for managing the canal and its contributing watershed. The currently defined watershed is 555.000 ha of which 339.000 ha are located in the original hydrographic basin. The added area covers the watersheds of the Rio Coclé del Norte, Rio Miguel de la Borda (Rio Caño Sucio) and the Rio Indio.

To connect the extended watershed area to the Panama Canal (Lake Gatun), the PCA is planning to construct 3 to 4 large dams, 3 reservoirs, together with canals and tunnels. The dam planned for the Rio Coclé del Norte is currently projected to inundate a total area of ca. 45,000 ha. The total project is foreseen to inundate ca. 58,000 ha and to transfer a substantial amount of water to the Panama Canal together with generating 250 MW of hydropower. The additional amount of water to contribute to the canal is needed, according to PCA, to enable the widening of the canal to allow larger post-Panamax ships to use the canal and satisfy the increasing water demand for household use.

Preliminary estimates indicate that approximately 15.000 people in ca. 40 villages and hamlets will be directly effected by the dam construction and flooding. Many more will be indirectly affected as resettlement is likely to take place within the river basin. Most people in the basin practice shifting cultivation (Tumba) and have no registered ownership of their land. The area forms also part of the regional biological corridor of which the Copé National Park, just outside the planned inundated area, forms an important part. Within the catchments considerable areas of primary forests still exist.

Lack of a participatory and transparent decision making process...

So far the PCA has made several attempts to inform various stakeholder groups about the existing plans. Information spread through the local newspapers has raised a serious unrest under the local population. Most of the information available to the local people is vague and incorrect. The fear of many people is mainly based on this misinformation causing people not to know what will happen with their livelihoods and land in the coming years. Many people in the area do not seem to have a fundamental problem with the dams but want to see adequate resettlement and proper compensation for their losses. Already some of them are selling their land to foreign (Colombian) and national companies to ensure payment for their land for which they have no official registered entitlements. In addition to local fears, environmental groups have raised serious concerns about the project affecting the regional biological corridor, a key element of biological diversity conservation in Mesoamerica.

People's fears have already raised the tension in the area to such an extend that no further investigations for the project design can be carried out as the safety of the personnel can no longer be guaranteed. Some of the people already talk about the creation of 5 reservoirs..... 3 as planned by PCA, one with tears and another one with blood. The existing tension in the project area can delay the development of the project considerably. This could have serious consequences for the competitive position of the Panama Canal in the international trade and transport market.

During the last two years the World Commission on Dams has been analyzing cases similar to the Panama Canal. In November 2000, the Commission will present guidelines on the planning, development and decommissioning of large dams. These

guidelines are likely to gain a general acceptance within the dam and energy industry, the NGO community, and the financial and donor sector. All parties involved in the discussion on the dam construction in the Panama canal, including the PCA and the local people's movement, have expressed interest in considering the incorporation of the WCD guidelines in the development of the new projects.

Goal

A fair, transparent and participatory process of development options for the management of the Panama Canal basin that compensates affected people fully and minimizes environmental impacts.

Objectives

- To make information available on project design and planning, and concerns from all stakeholders;
- To establish a dialogue between PCA and other stakeholders, especially NGOs and local groups;
- To discuss the WCD guidelines with all stakeholders, including the opportunities for its application in Panama;
- To developing a national consensus on the process of developing the Panama Canal basin.

Outputs

- Web-site and paper copies with regular updates on the Panama Canal basin news;
- National hearing on application of WCD guidelines in Panama;
- Report of national hearing, including reactions from all stakeholders;
- Establishment of national consensus on planning process.

Description

Before dissemination of the WCD guidelines in November 2000, the project will concentrate on working with all stakeholders to explore possible formats of dialogue and participation in the planning and development of large dam projects in the Panama Canal watershed. In November 2000 the WCD guidelines will be disseminated. After this the project will provide technical support to all stakeholders to interpret the guidelines and develop their position on the application of the guidelines in Panama. A special emphasis will be placed on the dams envisaged within the new Panama Canal basin.

During that period, the project will prepare a national hearing, scheduled for February 2000. During the hearing, members of the WCD will participate in discussions of their guidelines. All stakeholder groups will have prepared their position on ways in which the guidelines can be applied in Panama. The presentation of these papers and the subsequent discussions will allow the participants to explore options for establishing a transparent and participatory process for the development of the Panama Canal basin. If successful, the outcome of the hearing will be a clear definition of a process of establishing such a process.

After the hearing, the project will produce the hearing's proceedings and disseminate these to all participants. They will also be made available on the project's web site which would contain all relevant information on the project available, including position statements of all groups. The project will further work with all stakeholders to establish the agreed process and define a clear institutional set-up for its implementation.

IUCN's Potential partners

Panama Canal Authority, CICH, ANAM, ARI, Fundación Natura, CARITAS, Campesinos movement, World Bank, JICA, USAID, RUTA, World Commission on Dams post-secretariat.

Duration

2 years

Budget

US\$ 300,000

COMPONENT 3

11.3 WISE GOVERNANCE

Legal and institutional foundations for sustainable management of water
resources in Central America
(Central America)

11.3.1 LEGAL AND INSTITUTIONAL FOUNDATIONS FOR SUSTAINABLE MANAGEMENT OF WATER RESOURCES IN CENTRAL AMERICA

Moving towards sustainable water use...

Central America is located in the tropical zone of the Northern Hemisphere, and is considered a bridge between North and South America. The area's greatest wealth lies in its cultural and natural diversity with e.g. an estimated 7% of the earth's biological diversity. Population growth in the region is however second fastest in the world after Africa, and 59 million people are expected to live in the region by 2025. This implies that a huge pressure on natural resources will occur through for example, deforestation of upper catchments, drainage of wetlands for agriculture and pollution of waterways by untreated sewage and waste. All these will form an increasing threat to the capacity of ecosystems to satisfy societies needs for public goods and services provided by these ecosystems. This points out to the need for effective legal and institutional frameworks to manage and protect the resource base.

In Central America there is currently a lack of coordinated planning for the sustainable use of natural resources. Progress towards sustainability is also hampered by outdated and little applied legislation and a political vision that emphasizes mainly short time-ranges. Most recently some advances have been made to establish appropriate legal and institutional mechanism. For example, the right to health and a healthy environment have now been included in the national constitutions of all the countries in the region. Each country has passed general environmental laws that provide opportunities for public participation and established concrete forms of natural resource administration. However, legislation on water remains an "Achilles heel" throughout Central America. This is due to the fact that a large number of laws related to water resources were formulated a long time ago, causing them now to be outdated, overlapping and insufficient. Water administration has therefore been chaotic which forms one of the principal causes for the current degradation of the resource base.

An alert has been sounded regarding this situation and some political will has been expressed in response. The 1994 Alliance for Sustainable Development (ALIDES), for example, has prioritized the "formulation of policies and legislation" on management and conservation of water resources. The Central American Commission on Environment and Development (CCAD) has followed up on the ALIDES priorities and is now carrying out valuable projects to address some of the problems described above. These include the formation of consultative regional committees and a process for the preparation and approval of an Action Plan for Integrated Water Management (Plan de Acción para el Manejo Integrado del Agua en el Istmo Centroamericano - PACADIRH).

Legal and institutional obstacles to overcome...

Despite the recent progress in co-ordination, water management in Central America continues to lack a coherent juridical system for the protection and sustainable use of water resources. A system is required that is consistent with the needs of the 21st century and takes into account the regional policies and the commitments made to international agreements.

The basic problems within the legal and institutional framework can be summarized as follows:

- Citizens lack the environmental awareness and the knowledge of legislation that would ensure compliance;
- Lack of coherence between legislation on the environment and legislation on water resources and between national policies and regional and international commitments;
- Weakness of the State agencies responsible for the application of legislation and environmental protection.

To overcome these, there is a clear need to examine the weaknesses and strengths in current national legislation and policies on water management and conservation. At both the national and regional levels, coherent action plans are needed based on these analysis, that would assist governments to find new ways for an effective administration and management of the water resource base.

Goal

Strengthened legal and institutional frameworks for integrated water resources conservation, development and management in Central America.

Objectives

To develop and analyze the juridical systems affecting water management in all countries in the Central America;

To consult with national and regional institutions on the development of national action plans to develop coherent legal and policy frameworks at national and regional levels; to develop a regional legal framework and strategy for sustainable water management applying an ecosystem approach.

Outputs

- An analysis of the major strengths and weaknesses in environmental legislation and institutional frameworks regulating water resources in Central America;
- Appraisals of the juridical and institutional situation regarding water management in each country;
- Draft text of the 'Central American Agreement for the Sustainable Management of Water Resources';
- Strategic national action plans to strengthen the juridical and institutional frameworks for water resource management.

Description

The project will be carried out over a period of two years. During the first months, a compilation of relevant national laws and policies will be carried out. On the basis of this the need to reinforce or update existing information will be determined. Furthermore, national commitments to regional- and international agreements related to water management will be analyzed for each country.

An appraisal report will be produced to be presented to government institutions and civil society for consideration. A series of national workshops will be organized during the second half of the first year to obtain feedback and discuss further improvements. Once the information at national levels is consolidated and consensus is reached on the results, a comparative analysis between countries will be prepared. This analysis will form the basis for the development of draft text of a "Central American Agreement for the Sustainable Management of Water Resources."

At the regional level, three workshops will be held to develop participation of and build consensus among major actors with respect to the Agreement. The Agreement will be submitted to CCAD for subsequent presentation to the Central American environmental ministers for their signature. Based on the Agreement, strategic plans will be prepared to strengthen the legal and institutional framework for management of water resources in each country of the region. These plans will include identified strengths and weaknesses, and proposed actions for the short, medium and long term.

IUCN's Potential Partners

CCAD – Central American Commission on Environment and Development, CRRH – Comité Regional de Recursos Hidraulicos, IUCN Members, Members of IUCN Environmental Law Commission, GWP CATAAC.

Duration

2 years

Budget

US\$ 600,000

COMPONENT 4

11.4 ECONOMICS AND FINANCE

Economic valuation of environmental services and small scale incentives within
the Panama canal basin
(Panama)

11.4.1 Economic valuation of environmental services and small scale incentives within the Panama Canal Basin (Panama)

A high water price but no transfers to conserve the source...

The Panama Canal watershed provides numerous environmental services to the users of the canal and the people of Panama. The 339,000 ha watershed currently generates an annual discharge of 4,400 million m³. It provides an essential service for transferring approximately 12,000 ships per year for which it uses app. 3,020 million m³ per year. The average toll per ship is ca. 30,000 US\$ including all services for supply of water and transfer. A single ship transfer needs ca. 240,000 m³ of water implying a price of ca. 8,00 US\$ per m³ of water. Other environmental services provided by the ecosystems within the watershed include the production of wood, non-timber products, fish, tourism opportunities and habitats for a range of animals including over 1,000 bird species, especially within numerous protected areas present in the basin.

Serious degradation within parts of the basin could compromise considerably the proper functioning of the canal and the benefits it generates. Deforestation occurs on a wide scale especially in the western part of the watershed. Small-scale farmers practice shifting cultivation ('Tumba') that includes deforestation of primary and secondary forests. Bad land husbandry, including insufficient pasture management, causes considerable sediment production threatening the proper functioning of the canal and drinking water supplies of the cities of Panama and Colon and other urban areas. In the eastern part of the watershed, contamination from urban and industrial areas threatens the quality of the canal waters. In some parts of the watershed, the spread of aquatic weeds and invasive species could form a serious threat to free navigation.

The Panama Canal Authority (PCA) that replaced the Panama Canal Commission (PCC) on 31 December 1999, main priority is to manage the basin in a sustainable way as to ensure the adequate functioning of the Canal. To date neither the PCC nor PCA have considered investing some of the return of the canal in the conservation of environmental services provided by the canal watershed ecosystems. This despite the fact that they are one of the main beneficiaries of the environmental services provided by these. At the same time, local farmers and rangers are neither investing much in the conservation of the resources. Their efforts would however form the basis of a sustainable management of the basin.

Valuation of the resource base and developing local incentives for conservation...

A sustainable watershed management can only be established if a better understanding of the economic values of the catchment's environmental services is generated. Increasing interest exist in developing such valuation. FUNPASA (Fundacion Panameña para Servicios Ambientales) is developing valuation of forest resources in Panama in the context of the implementation of the Clean Development Mechanism related to carbon sequestration. RUTA (Regional Unit for Technical Assistance) is considering the valuation of entire local production systems as part of supporting the development of sustainable farming systems in the watershed.

Little experience exists however with economic valuation of environmental services in Panama. In some other parts of Central America, the valuation of these services has been well developed. In Costa Rica, for example, a range of studies have been carried out on the valuation of the ecological services of mountain forests and mangroves. These studies generally point out the high economic value of these resources. The total sum of services provided by healthy mangrove ecosystems, for example, is estimated to ranges from 1 US\$ to 10 US\$ per ha. The lack of economic valuation

studies in Panama is directly related to the lack of national expertise and experience in this field.

To develop a basin-wide conservation, local incentives are needed that are based on the proper valuation of the resource base. These incentives could be directed to replacing the unsustainable slash and burn cultivation for more adequate cultivation techniques, reducing cattle encroachment on stream and river riparian zones and reduction of untreated effluent discharges. To develop these local incentives more knowledge and experience is however required based on defining specific mechanisms, their effectiveness and likely degree of local acceptance.

Goal

The full recognition by local communities and the Panama Canal Authority of the economic values of the services provided by the Panama Canal basin's ecosystems and the establishment of incentives to conserve these.

Objectives

- To develop a methodology for economic valuation of the ecological services within the Panama Canal Watershed;
- To test the methodology in selected key-ecosystem types and define values of their services;
- To make an inventory of incentive mechanisms for watershed conservation at local levels;
- To evaluate a set of selected incentive mechanisms with local communities within the watershed and define feasibility of their implementation.

Outputs

- An estimate of the economic value of goods and services of selected ecosystems in the Panama canal basin;
- A tested methodology for economic valuation of environmental services within the Panama canal basin including data-sets compiled from various sources;
- A brochure with examples of successful small scale incentives for conservation made available for local use;
- Feasibility assessment and draft strategy report for the implementation of local incentives for conservation within the basin.

Description

During the first phase (0-2 months) an assessment of data availability and an analysis of the best available general methodology will be made taking into account the time and data constraints. Based on these, the project methodology will be defined for five key-ecosystem types (upper watershed forests, lakes, rivers, slash and burn systems and pastures). A Technical Advisory Group (TAG) will be formed that will evaluate the methodology and discuss its finalization.

The second phase (2-9 months) will concentrate on compiling required data and developing a draft report on the economic values of the services of key ecosystems. The TAG will review the draft report before its finalization. The work during this phase will also include the development of a survey of local level incentive mechanisms for basin-wide conservation. This work will be based on the input of the IUCN economics network and the TAG and other sources. A brochure on local level incentives for conservation will be produced for local use.

In close co-operation with NGOs working in the Panama Canal basin (e.g. Fundacion Natura, ANCON, CARITAS, RUTA) and local communities this evaluation will be

carried out during the third phase of the project (9-18 months). The evaluation will first concentrate on explaining the working and potential size of incentive mechanisms such as subsidies, tax breaks, in kind payment and service vouchers. Second, the work will focus on an appraisal of the acceptability of selected incentives and the definition of pre-conditions for its likely success or failure. On the basis of this, a final assessment will be formulated of the applicability of small-scale incentive measures for conservation within the Panama Canal watershed together with key elements of an implementation strategy.

IUCN's Potential partners

Fundacion Natura, ANCON, RUTA, CARITAS, Universidad Panama, national and regional consultants.

Duration

18 months

Budget

US\$ 250,000

COMPONENT 5

11.5 CREATING & SHARING KNOWLEDGE

Assessment of freshwater biological diversity in Central America and
conservation priority definition
(Central America)

Water, food and environmental security in Central America –
defining common ground
(Central America)

11.5.1 ASSESSMENT OF FRESHWATER BIOLOGICAL DIVERSITY IN CENTRAL AMERICA AND CONSERVATION PRIORITY DEFINITION

Decline in freshwater biodiversity unfolding unnoticed...

Several countries in Central America have developed their national biodiversity conservation strategies. These strategies define national status of and priorities for biodiversity conservation. In all strategies the conservation of various forest types and coastal zones form key elements. Far less documented and prioritized is the freshwater biodiversity. In most countries the information available on freshwater biodiversity is extremely limited and existing information is often difficult to find as it is contained in for example university reports and environmental impacts assessment inventories. Furthermore, a limited capacity is available in most countries in areas such as limnology, hydrology, freshwater ecology, etc.

It is however generally recognized that the region's freshwater biodiversity is one of the richest of the world but that it is seriously threatened. Development of river infrastructure (dams and dikes), pollution and introduction of exotic species (e.g. *Tilapia* sp.) have already caused severe and unrepairable damage in several river basins. The weak documentation of the status and change in freshwater biodiversity makes the issue hardly recognized in water management policy discussions and project implementation. This despite the fact that the freshwater biodiversity forms an essential element of a healthy river and lake ecosystem. The loss can have serious economic consequences such as for example the reduction of catches of fish and the degradation of water quality due to decline in water filtering mussels.

A rapid response is required – status assessment and conservation priority setting...

Currently there is no comprehensive overview of freshwater biodiversity. Information on fish, mussels, invertebrates, micro-organisms is scattered. There is an urgent need to compile complete overview of available data that is linked to specific lakes, rivers and estuaries. On the basis of this compilation the status of and gaps in knowledge should be clearly defined for various species. Particularly important is to gain more knowledge on the species richness in remote river basins such as for example in Darien, Panama Canal Basin (Panama), Mosquito Coast (western Nicaragua), Mosquitia (northern Honduras), and Escuintla – Santa Rosa (southern Guatemala) and the rich freshwater ecosystems of El Salvador and Belize. In many cases this will require specific studies to gather the required preliminary baseline data.

Information itself, however, will not conserve freshwater biodiversity. There is currently a urgent need to clearly define conservation investment policies together with clear strategies for their realization. It is also needed to improve the communication on the importance of freshwater biodiversity for maintaining the water resources bases societies are depending on. Success in developing the strategies depends much on the generation of national capacities and resources to continue survey work and define conservation actions.

Goal

Conservation of freshwater biodiversity in Central America through a targeted strategy based on scientific knowledge and adequate priority setting.

Objectives

- Establish a network of regional and international experts and a capacity building process;
- Compile and review existing freshwater biodiversity studies for each country;

- Define knowledge gaps, main threats and conservation priorities for freshwater biodiversity in the region;
- Develop specific national and regional communication material targeted at different stakeholder groups.

Outputs

- Preliminary and final assessment report of freshwater biodiversity status in Central America
- A set of reports of targeted studies
- Central America freshwater ecosystems mapping
- Central America Freshwater Biodiversity website
- National freshwater biodiversity actions plans including priority areas for protection and rehabilitation

Description

During the first year the project will set up the network of experts in each country in the region. These networks will be twinned or linked with international experts where appropriate. During a start-up workshop the network will develop a concrete work plan. Based on this, contracts will be issued for national reviews of existing information on freshwater biodiversity in each country. Sources to be used will include for example published studies, gray literature, EIA studies and fisheries statistics. The information will be organized according to species and river basins. Furthermore, information on key threats for each river basin or groups of river basins will be defined. The contractors will especially be stimulated to sub-contract young experts to allow them to receive on the job training. An international expert group, consisting of members of the IUCN Species Survival Commission and Commission on Ecosystem Management will review the draft reports before their finalization. A website will be developed to disseminate the results.

During the second year, targeted studies will be commissioned to national research centers and universities. These studies will address some of the critical gaps that are defined during the first year of the project and specifically focus on areas with little information, a potential high biodiversity and immediate and serious threats. During a workshop, the members of the regional network will define a process for conservation priority setting and define target basins on a preliminary basis. The website will be regularly updated with new reports and freshwater biodiversity news from the region. The international expert group will review the draft reports of the field studies before their finalization.

The work carried out during the third year will concentrate on finalizing all studies and making them available on the web. Furthermore, national conservation strategies will be developed on the basis on consultation with key stakeholders in various basins and from various institutions. The national expert networks of the project will provide technical support to this process. Finally the national freshwater biodiversity conservation strategies will be published and form part of the national biodiversity strategy of each country.

Potential partners

IUCN The World Conservation Union, Global Environmental Facility, Conservation International, Ministries of Environment and Water Resources, National Universities, IUCN Species Survival Commission, IUCN Commission on Ecosystem Management.

Duration

3 years

Budget

US\$ 3,000,000

11.5.2 WATER, FOOD AND ENVIRONMENTAL SECURITY IN MESOAMERICA - DEFINING COMMON GROUND

Filling the information gap

The Dialogue on Water, Food and Environmental Security has been established to assess the contradiction between the allocations of water for food production and environmental services and promote dialogue to resolve existing differences.

The starting point for any dialogue is a shared pool of agreed information, or in simpler terms an agreement of what is exactly being discussed. Without shared information, discussions on what the issues are and where possible solutions may be found are bound to fail. Therefore, there needs to be a collaborative effort to develop an information base on water, food and environment in the Mesoamerican context.

Several parties in Mesoamerica hold valuable information to that end. To support national dialogues, regional maps on environment, food and water are useful tools. A GIS system, merging this information and making it accessible to the region is required to support the dialogue. This information system can be linked to other relevant sources of information, for instance to specific case studies with special relevance to the topics under discussion.

Assessing the contradictions

At the moment, the networks on food and environment seem to be operating almost separately. To establish and enable the dialogue, both groups need to be brought together to make an assessment at the national level. This assessment can relate to allocations of water, food security indicators, environmental changes, national policies or specific case studies. If a joint assessment can be produced by the different parties involved, the subsequent discussion on policies, practices and issues would be much more profound and likely to succeed. If only limited agreement can be reached, national dialogues can focus on these. To that end, representatives of both networks have to be brought together to write such an assessment, as input into the Dialogue.

Naturally, the effort to reach agreement on the information is part of the dialogue and will hopefully create some form of consensus on some or most parts of the issues involved. At the national level, institutes, universities, experts, irrigation specialists and IUCN members can be brought together in small groups of 2-5 people to write the assessments. The discussions in these groups will form a prelude to the wider debate and is in itself already an impetus for closer collaboration and consensus on development paths. International and regional organizations can support these groups by providing access to relevant information. A series of national dialogues would have to be formulated as a separate proposal.

Goal

To develop a shared regional information base and founded national assessments of the issues in the field of water, food and environmental security in order to allow for national dialogues and better decision making.

Objective

- To develop a GIS system that links environmental, food-related and water-related information for Mesoamerica
- To elaborate a regional assessment of the contradictions between issues of water, food and environmental security as a discussion paper for future national debates

Description

Phase 1 - Building the GIS

- Define relevant holders of information and produce a meta-database of their databases
- Develop an agreed GIS system to merge that data into regional maps
- Disseminate the GIS to national parties in the dialogue and the wider audience

Phase 2 - Assessing the issues

- Select relevant representatives for the Assessment Group at national levels
- Specify the tasks and outputs of the national Groups
- Write national assessments as inputs for the regional assessment
- Solicit feedback from specific experts and institutions where appropriate
- Finalize assessment report

Phase 3 – Disseminating the results

- Hold a regional event where the results of the assessment are presented to stakeholders
- Make available all data to stakeholders to use it in their decision making process and to trigger national dialogues

Potential partners

IUCN The World Conservation Union, Global Environmental Facility, Ministries of Environment and Agriculture, National Universities, IUCN Commission on Ecosystem Management, FAO, various SICA agencies (CCAD, commission on agriculture), ICID

Duration

18 months

Budget

US\$ 500,000

COMPONENT 6

11.6 STRUCTURED LEARNING

Network Learning in the Central American Water and Nature Initiative
(Central America)

11.6.1 NETWORK LEARNING IN THE CENTRAL AMERICAN WATER AND NATURE INITIATIVE

A growing demand for technical expertise

Central America shows great involvement with the issues on the border of water and environment. A large number of institutions and experts work in this field, and increasingly collaborate on a basin level. However, such change requires support in the form of targeted knowledge and information on the ecosystem approach to basin management and the different tools and methods. At the moment, it is clear that specific capacities are missing and that there is great demand for IUCN to support such training from within and outside the IUCN network.

Naturally, some of these institutions or experts will be involved in the activities of specific projects of the Water and Nature Initiative. However, there remains a larger group which cannot directly be involved and which needs to otherwise be given the opportunity to learn about the methods and achievements of the projects. To this end, a specific training component for Mesoamerica within the framework of the Water and Nature Initiative is required. One important element to achieve this is to ensure access to information resources. But, given the nature of the capacities involved, it is quite difficult if not impossible to transfer such capacities through publications or training materials alone. The skills necessary can only be acquired in personal interaction.

Developing a training package for network learning

Furthermore, it is necessary to create alliances between the Initiative, regional partners and specific training institutions. Lessons and experiences from the projects should be transferred to training packages, which can be widely used and disseminated within the region and used with limited support from project partners or training institutions. The long-term involvement of training institutions in projects, to specifically develop best ways of knowledge transfer is required.

The development of the training package should go through a number of phases. First, the specific experiences and knowledge required for basin management have to be identified and described. Second, the match of these experiences to the regional and national experts have to be discerned to establish a proper learning path. Third, the training package has to be developed, supported by a network of support and consultation. Naturally, these phases should build on for instance the tool-boxes developed in other Initiative projects.

Goal

The goal of the project is to develop a training package on the ecosystem approach to basin management within the Mesoamerican context, which is supported by specific regional and national resource institutions and persons.

Objectives

- Establish an information infrastructure to make relevant publications accessible
- Develop a training package on the ecosystem approach to basin management
- Develop a regional network to specifically support learning

Description

Phase 1 Defining skills and knowledge

- Identify the specific skills and knowledge required in basin management
- Assess regional capacities and training available
- Describe learning goals and learning path
- Develop a draft training package

Phase 2 Testing the approach

- Test the training package through workshops and field visits with selected groups
- Define appropriate materials for dissemination and self-study
- Identify resource persons and institutions to support learning

Phase 3 Implementing network learning

- Finalize the training package and select most appropriate dissemination form
- Implement the role of resource persons and institutions in learning through formal agreements
- Disseminate the training package

Potential Partners

CEDOHUM, UICN-ORMA, National Working Groups, Regional Training Institutions (CATIE, Univ. El Salvador), International Training Institutions (RIZA, IAC), CATAC, CADC

Duration

2 years

Budget

\$150,000