

# **Informe Final**

## **Proyecto**

**Fortalecimiento de los sistemas que garantizan un manejo  
sostenible de los desechos electrónicos**

**Instancias ejecutoras del Proyecto**

**ACEPESA (ONG-Coordinadora)**

**Cámara de Industrias de Costa Rica (CICR)**

**Ministerio de Salud Pública-Ministerio de Ambiente y Energía**

**Instituto Tecnológico de Costa Rica**

**Coordinadora en el Instituto Tecnológico de Costa Rica**

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**Fecha de ejecución del proyecto**

**1 de julio, 2004-31 de octubre, 2007**

**Noviembre, 2007**

**Resumen:**

Este proyecto surgió como una segunda fase al establecimiento de una estrategia de manejo sostenible para residuos electrónicos (ejecutado agosto, 2002-junio, 2004). Con el objetivo principal de implementar la estrategia propuesta que debe incluir un componente legal, un componente técnico-ambiental, un componente financiero y un componente social.

*Componente Legal*

De la primera fase se estableció la necesidad de un soporte legal que incluya entre otros, dos aspectos importantes para garantizar el funcionamiento de tal sistema de manejo:

1. Prohibición de incorporación de los desechos electrónicos con los desechos ordinarios o domésticos.
2. Sistema de manejo es responsabilidad del productor-importador (Responsabilidad Extendida al Productor, REP)

El trabajo incluyó un estudio y análisis de los sistemas existentes en países industrializados, es importante anotar que no existía en el momento ningún país en desarrollo con un sistema formal y legalizado de manejo para los residuos electrónicos. Los sistemas de manejo analizados incluyen Holanda, Suiza, Bélgica, Inglaterra y Canadá.

La sensibilización del sector productor-importador de equipo electrónico llevó al consenso de la necesidad de reglamentar sobre los residuos electrónicos y se estableció una dinámica abierta a la participación de dicho sector (representados por INTEL, AMCHAM y CICR), adicionalmente incluyó al sector gobierno (MINAE-Min.Salud), el sector académico (ITCR), y el sector de usuarios individuales (representados por ACEPESA) y sector de usuarios institucionales o empresariales (representados por ICE, y Procter and Gamble). El grupo conformado llamado Comité Técnico Nacional (CTN) constituye uno de los mayores logros del proyecto ya que los diferentes sectores realmente llegaron a identificarse con la problemática.

El reglamento redactado durante este proceso fue comparado y ajustado en lo necesario con el proyecto de ley que se encuentra en la Asamblea Legislativa referida como Ley para la Gestión Integral de Residuos, con el fin de evitar futuros roces con el reglamento existente.

Este reglamento específico para residuos electrónicos ha sido sometido a consulta pública, y se encuentra a la espera de aprobación por el poder ejecutivo y el Ministerio de Salud y el Ministerio Ambiente y Energía. (ver anexo 2)

*Componente Técnico-ambiental*

Como insumos importantes se realizaron dos planes pilotos, cuyos resultados establecieron de forma preliminar una propuesta al proceso de tratamiento que podría establecerse a nivel local y el tratamiento final de algunos materiales en empresas extranjeras, así como los costos aproximados de cada fase, incluyendo las fases de:

- Campaña pública para el evento de recolección
- Acopio y transporte a la planta desensambladora
- Proceso de desensamblaje y separación de materiales
- Comercialización local con recicladores
- Empaque
- Permisos de exportación de material peligroso
- Comercialización internacional y tratamiento final
- Logística de transporte internacional

El primer plan piloto se realizó con el tratamiento al equivalente de 1000 computadoras (CPU+Monitor+teclado y mouse), provenientes todas del Instituto Tecnológico de Costa Rica. Este ejercicio constituyó una experiencia importante ya que se pudo establecer los requisitos básicos de los operarios, áreas de trabajo, áreas de almacenaje de material de entrada y salida, entre otros. Sin embargo, no incluyó las fases de recolección pública y campaña.

El segundo plan piloto incluye todas las fases. Con los resultados de los dos planes pilotos se estableció que el costo preliminar de tratamiento del equipo electrónico puede alcanzar los \$14-

16 por computadora. El dato pudo ser afinado posteriormente debido a economías de escala sobretodo en la parte de acopio y transporte internacional y se logra llegar a un rango entre \$9 y \$11 por computadora lo que corresponde a \$0,50-0,60 por kilogramo.<sup>1-4</sup>

#### *Componente Financiero*

Establecido en el decreto de reglamentación sobre el manejo de residuos electrónicos, los importadores asumirán la responsabilidad del manejo en unidades de cumplimiento, las cuales pueden ser individuales (Importador de una marca presenta un plan para el manejo de los residuos de esa marca en específico) o colectivas (importadores se unen en una unidad y presenta el plan para el manejo de un equivalente a las importaciones realizadas por año). Para facilitar el proceso de la conformación de unidades de cumplimiento se realizaron reuniones con el sector en forma individual y se facilita una coordinadora. El sector insiste tal y como se ha visto en otros países que el reglamento debe ser aprobado por el gobierno antes de proceder. Sin embargo, muestran interés y aceptan la responsabilidad tal y como lo establece el reglamento.

#### *Componente social*

Se realizó una Jornada Nacional de Recolección de Residuos Electrónicos (20 de Octubre, 2007) en la cual tuvo la participación del sector comercial (cadena de Supermercados Price-Smart) y los sectores y empresas antes mencionadas. La jornada resultó de gran éxito recolectándose más de 60 toneladas de material para desensamblar. Este material será desensamblado en la empresa FORTECH que a la fecha era la única empresa que tenía una alianza con la empresa canadiense GEEP para el tratamiento de los materiales a exportar. Sin embargo, la empresa Servicios Ecológicos ya ha comunicado que también ha establecido las alianzas necesarias con otra empresa suiza-canadiense Xstrata como procesador final. Lo anterior es muy importante pues se ha iniciado el proceso empresarial y de construcción de infraestructura para darle solución a los residuos electrónicos en el país.

Del resultado de la Jornada de Recolección también se infiere que el país está preparado para iniciar el cambio en los sistemas de manejo de residuos sólidos, por lo que si se establecen los sistemas de recolección adecuados los materiales podrán ser separados y recuperados, lo que contribuiría a resolver el problema del tratamiento de los desechos sólidos en general.

Como actividad de cierre del proyecto, se realizó un Taller Centroamericano sobre Residuos Electrónicos (29-30 de octubre, 2007) con la asistencia de 12 representantes centroamericanos, para compartir la experiencia del proceso con la región. El taller resultó una actividad valiosa que cumple con el objetivo de iniciar procesos similares en la región y establecer en lo posible esfuerzos conjuntos para la solución de la problemática, especialmente conociendo que la economía de escala determina en forma significativa los costos de tratamiento.

### **1. Introducción:**

Costa Rica presenta un problema grave en lo que se refiere al manejo de los residuos sólidos en general. El problema incluye no sólo tecnologías e infraestructuras obsoletas en lo referente al tratamiento sino también deficiencias en las reglamentaciones y aspectos socio-culturales.

La eficiencia de los recursos se maximiza cuando se establecen sistemas de recolección separada de materiales, con el fin de poder reciclarlos e introducirlos de nuevo en una línea de producción. Sin embargo, la infraestructura requerida para que ocurra dicha recolección es muy incipiente y se limita a iniciativas puntuales que no tienen cobertura de las zonas urbanas, mucho menos de las zonas rurales. Es así como inclusive materiales simples (como latas de aluminio, envases PET, vidrio y papel) que pueden ser reciclados en industrias locales no tienen una tasa de reciclaje importante (55%, 25%, 20%, 35% respectivamente).<sup>5</sup>

En el caso de materiales complejos como los equipos electrónicos, no existía al momento de inicio de este proyecto ninguna opción ambientalmente adecuada. Afortunadamente, un aspecto socio-cultural, el equipo electrónico obsoleto o al final de la vida útil (FVU) ha sido en su mayoría almacenado en bodegas, closet o cocheras. Pero actualmente, cada vez es más común observarlos junto con los desechos ordinarios o en lotes baldíos.



Figura 1. Desechos electrónicos encontrados en lote baldío

Para poder establecer un sistema de manejo de residuos electrónicos es necesario implementarlo en forma integral, en el que no sólo se establezca el reglamento (legal) sino también las responsabilidades de los diferentes actores en torno a un determinado producto. La tendencia mundial, es que la responsabilidad de cualquier empresa de manufactura de cualquier producto, no se limita a realizar un proceso controlado dentro de su infraestructura sino que se extiende al punto de venta y al tratamiento del desecho de embalaje involucrado y el desecho al final de la vida útil, de forma que garantice el tratamiento ambientalmente adecuado de todo residuo originado por su producto. Lo anterior se conoce como principio de responsabilidad extendida al productor (REP o EPR, de las siglas en inglés)<sup>3</sup>.

El país ha establecido sólo un sistema basado en EPR en el sector de llantas, en otros materiales se han establecido iniciativas voluntarias como es el caso de las latas de aluminio, los envases de PET. Una empresa de fotocopiadoras (RICOH) ha establecido un sistema para recolectar los equipos que no funcionan, de los que desensamblan y tienen una bolsa de repuestos para servicio y los materiales que no sirven los envían de nuevo a casa matriz en Japón. Para que un sistema funcione deben establecerse planes y metas de recolección y tratamiento, lo cual debe estar regulado y verificado por alguna instancia.

El proyecto tuvo como objetivo general la implementación y el fortalecimiento para asumir los roles correspondientes en el sistema de manejo sostenible de residuos electrónicos, que involucra a:

1. las instancias gubernamentales correspondientes
2. las empresas interesadas en invertir en el procesamiento primario de los residuos electrónicos
3. el sector importador de equipo electrónico para que se organice y pueda responder en forma sostenible al manejo de los residuos electrónicos.
4. el sector comercial-distribuidor de equipo electrónico
5. la sociedad civil

El conocimiento de la función específica de cada uno de los anteriores garantiza el buen funcionamiento del sistema que se establezca.

A manera de informe final se incluyen el informe final presentado al Organismo Internacional de financiamiento Holandés el cual se encuentra en el anexo 3, con el desglose correspondiente por objetivo específico.

Adicionalmente se incluye en el anexo 4 el documento: Gestión de residuos electrónicos: sistematización de la experiencia.

## 2. Materiales y métodos:

De la estrategia propuesta en la fase anterior se determinó que para poder implementar un sistema de manejo de residuos electrónicos el país requería acciones de fortalecimiento en los siguientes aspectos:

- i) **Fortalecimiento legal**, al no existir una legislación específica con respecto a la disposición de residuos electrónicos es necesario crearla como un decreto ejecutivo que es la vía más rápida. La creación del decreto se dio en forma participativa mediante reuniones por el Comité Técnico Nacional (CTN) con representantes del sector gubernamental (Min.Salud y MINAE), representantes del sector privado (productor o importador) (Cámara de Industrias de Costa Rica, American Chamber of Commerce, Cámara de Comercio), representantes del sector civil (ACEPESA), representantes del sector académico (ITCR). Inclusive en varias ocasiones participaron representantes de generadores de residuos electrónicos de gran escala (Procter&Gamble). La discusión de los términos del decreto llevó un período de dos años aproximadamente, con reuniones quincenales. Se organizaron tres talleres para la presentación y discusión del decreto propuesto con el sector importador y productor (representantes de las principales marcas distribuidas en el país, GBM, HP, Epson, DELL, Panasonic). Se tomaron las observaciones para su incorporación y el decreto fue revisado por el departamento legal del Min.Salud, se sometió a consulta pública durante un período de 6 meses, se recibieron cerca de 18 comentarios y observaciones que fueron atendidas cuando resultaron pertinentes. Este decreto ha pasado el proceso en el Min.Salud y se encuentra en el MINAE.
- ii) **Fortalecimiento institucional** Es necesario capacitar al ente gubernamental (Min.Salud-MINAE) para las funciones de supervisión y monitoreo del sistema. Para ello, dos oficiales gubernamentales realizaron una pasantía en Holanda, Bélgica e Inglaterra, en la cual discutieron con sus pares en cada país sobre las funciones, las dificultades, y los recursos requeridos para la supervisión y monitoreo. Adicionalmente, se realizó una pasantía a Canadá para observar los diferentes sistemas de cada provincia, el informe fue sometido a discusión en el Comité Técnico Nacional en el que participan los oficiales gubernamentales.
- iii) **Fortalecimiento Técnico-ambiental** Al no existir en el país empresas que ofrezcan el servicio de tratamiento de residuos electrónicos, fue necesario realizar experiencias piloto para determinar costos, recurso humano, instalaciones, etc. con el objetivo de crear alternativas de tratamiento en el país. Para ello se realizaron dos planes piloto graduales. El primero contempló únicamente el aspecto técnico de desensamblaje, separación de materiales, y comercialización local e internacional de materiales. El segundo contempló adicionalmente la campaña pública de divulgación del evento de recolección, como también el evento de recolección. A la fecha, han surgido dos empresas nacionales que brindan el tratamiento primario de desensamblaje y separación de materiales y la logística de exportación para los materiales que no existe tecnología en el país para hacerlo (monitores y circuitos).
- iv) **Sensibilización en el tema de residuos electrónicos** Se han realizado campañas de sensibilización que acompañaron los eventos de recolección. La divulgación de la problemática por medios de comunicación masiva (radio, televisión y prensa) , adicionalmente se entregaron panfletos con información técnica a los participantes en la recolección y se publicaron artículos específicos en revistas técnico-científicas y del sector privado.

Ver documento de sistematización de la experiencia (anexo 4, páginas 34-40)

## 3. Resultados y discusión:

Ver artículo final para Tecnología en Marcha

## 6. Conclusiones y recomendaciones:

Dar seguimiento a las instancias gubernamentales para la aprobación del decreto sobre el Reglamento para el manejo de residuos electrónicos.

Analizar la posibilidad de transferir la experiencia con otro sector como por ejemplo electrodomésticos.

#### 6. Aportes y alcances:

El proyecto ha sensibilizado el sector importador y ha conformado un equipo de trabajo dispuesto a asumir la responsabilidad del desecho del producto al final de su vida útil.

Los desechos electrónicos históricos alcanzan una cifra aproximada al 2006 de 13 500 toneladas, y aumenta anualmente en aproximadamente 3000 toneladas, por lo tanto el instrumento de financiamiento que establezca el sector debe incluir a los desechos históricos, de modo que los fondos correspondientes a los costos ambientales que se recolecten a partir de la venta de equipos nuevos, cubriría los costos de los históricos.

Es necesario que se establezca cuanto antes las unidades de cumplimiento, para que establezcan las metas de tratamiento y los flujos de los fondos económicos necesarios.

El tratamiento de desechos electrónicos históricos no era un objetivo de este proyecto las tres recolecciones realizadas constituyen 100 toneladas, lo que implica que cerca de 6,3 toneladas de plomo y 23 toneladas de plásticos que no llegaron a botaderos ni rellenos, esto mencionando dos de los principales materiales incluidos en los electrónicos.

Definitivamente hace falta mayor disposición de las instancias gubernamentales a realizar cambios en los sistemas de manejo de desechos sólidos, ya que se ha demostrado que el sector privado y la sociedad civil si están dispuestos a dicho cambio.

La divulgación de la iniciativa conllevó al interés de empresas nacionales y extranjeras a evaluar la inversión requerida para ofrecer el servicio de tratamiento primario logística de comercialización de materiales a nivel local e internacional. (ver anexo 5)

#### Bibliografía (ver anexo 6)

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3. Roa-Gutierrez, F. and Rudín-Vega, V. *R'07 World Congreso Book of abstracts*, **2007**, 43. Ponencia presentada "Primer modelo de responsabilidad extendida al productor (EPR) en Costa Rica para el manejo sostenible del residuo electrónico" original en inglés "Costa Rica's first EPR model towards a Sustainable Management of E-Waste". Davos, Suiza. Setiembre, 2007
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Revista electrónica alemana "Costa Rican team works towards a sustainable e-waste management system". Artículo publicado en revista electrónica.
5. Reporte Nacional de Manejo de Materiales Costa Rica 2006, [http://www.programacyma.com/taller\\_info/reporte\\_material\\_2006.pdf](http://www.programacyma.com/taller_info/reporte_material_2006.pdf) Programa CYMA Competitividad y Medio Ambiente. p.58-61, 89-90, 102-104
6. Poster en el II Encuentro de Investigadores del TEC. 2006
7. Dela Rocha, J.E.; Roa, F. *Industria*, **2006**, 18, 27-28.

## **Anexos 1.**

### **DOCUMENTO II**

#### **I. Cumplimiento de objetivos:**

Los objetivos se cumplieron y se llegó a una excelente sensibilización del sector importador electrónico, sociedad civil en general.

El decreto ha sido redactado a satisfacción del sector importador de electrónicos quienes aceptan la responsabilidad. Sin embargo todos establecen que de no haber un decreto aprobado, las casa matrices o sea los productores cuestionarían la factibilidad de establecer las unidades gestoras.

Se ha designado al programa CYMA, que trabaja en conjunto con el Ministerio de Ambiente y Ministerio de Salud para que continúe la labor de seguimiento. Sin embargo, hace falta un compromiso por parte de las instancias gubernamentales a proseguir con un cambio en la gestión de residuos sólidos. Todos los insumos necesarios previstos en los objetivos se han cumplido, tales como la estimación de costo, la facilitación para la conformación de las unidades de cumplimiento, las campañas de sensibilización, etc.

#### **II. Limitaciones y problemas encontrados:**

Las instancias gubernamentales no han mostrado la capacidad de ejecución, ni de monitoreo de los sistemas de manejo de desechos sólidos. En este proyecto se les ha capacitado mediante pasantías en países europeos para observar la forma de los sistemas que se ejecutan, los cuales se basan en EPR. Sin embargo, no se observa una evolución en su pensamiento hacia sistema centrado en el sector privado relacionado. No se puede establecer un sistema de responsabilidad extendida del productor sin ceder el manejo administrativo y financiero del sistema.

El tema de desechos tradicionalmente ha sido manejado por el Ministerio de Salud, a quienes se capacitaron dos funcionarios. Sin embargo, recientemente ha surgido una decisión política de trasladar este tema al Ministerio de Ambiente. Aunque, es muy posible que al menos 1 de los funcionarios pase al MINAE, será necesario esperar a que este traslado ocurra para que el decreto se le pueda dar viabilidad.

#### **III. Observaciones generales y recomendaciones:**

Es importante que el Comité Técnico Nacional se mantenga al tanto del avance del decreto. La aprobación del decreto en cuestión es muy importante para el avance. Costa Rica lidera a los países en desarrollo con la experiencia desarrollada durante la ejecución de este proyecto. Sin embargo, es importante que analice las posibilidades para un manejo regional, debido a economías de escala.

## **Anexo 2**

### **Decreto**

**REGLAMENTO DE CREACIÓN DEL SISTEMA NACIONAL PARA LA GESTIÓN DE  
RESIDUOS ELECTRÓNICOS**



**Decreto No. \_\_\_\_\_-S-MINAE**

**EL PRESIDENTE DE LA REPÚBLICA,  
LA MINISTRA DE SALUD Y EL MINISTRO DEL AMBIENTE Y ENERGIA**

De conformidad con los artículos 46, 50, 140 y 146 de la Constitución Política de la República de Costa Rica, así como los artículos 240, 263, 278 y 279 de La Ley General de Salud Número 5395 del 30 de octubre de 1973 y sus reformas y los artículos 1, 2, 68 y 69 de la Ley Orgánica del Ambiente Número 7554, de 4 de octubre de 1995.

**CONSIDERANDO,**

**1º**- Que según lo establece la Ley General de Salud, todos los residuos sólidos que provengan de las actividades corrientes personales, familiares o de la comunidad y de operaciones agrícolas, ganaderas, industriales o comerciales, deberán ser separados, recolectados, acumulados, utilizados cuando proceda y sujetos a tratamiento o dispuestos finalmente, por las personas responsables a fin de evitar o disminuir en lo posible la contaminación del aire, del suelo o de las aguas.

**2º** - Que según lo establece la Ley Orgánica del Ambiente, se procura dotar a los habitantes y al país de un ambiente sano y ecológicamente equilibrado, además establece la obligación de todas las personas de evitar la contaminación del suelo por acumulación, almacenamiento, recolección, transporte o disposición final inadecuada de residuos y sustancias tóxicas o peligrosas de cualquier naturaleza, dejando abierta la posibilidad de que entidades del estado, municipalidades y empresas privadas, promuevan la recuperación y tratamiento seguro de los residuos para obtener una optimización de uso o convertirlos en otros productos o subproductos.

**3º** - Que el aumento en la cantidad y cambios en la composición de los residuos no ha ido de la mano con la modernización de las estructuras administrativas, económicas y tecnológicas, adecuadas para su gestión, lo cual agrava la problemática nacional con el manejo de los residuos sólidos.

**4º** - Que la disposición inadecuada de residuos electrónicos provoca problemas de contaminación a la atmósfera, al suelo y al agua, causando perjuicio a la Salud Pública y al Medio Ambiente del país.

**5º** – Que es necesario orientar las políticas sobre el manejo de los residuos con el fin de que se aplique el principio de “Quien contamina paga”, el cual se encuentra amparado tanto en la legislación nacional como en los convenios internacionales, según el artículo 2 de la Ley Orgánica del Ambiente, y el principio 16 de la Declaración de Río Sobre Medio Ambiente y Desarrollo. Este principio orienta a que el causante de la contaminación asuma los costos de la prevención y la mitigación de los daños ambientales derivados por su propia cuenta, buscando internalizar esos costos ambientales dentro de la contabilidad particular de sus generadores, de modo que se refleje plenamente en los precios de los bienes y servicios que correspondan, de manera que pueda darse una valorización de los residuos y así ser incorporados nuevamente a los sistemas productivos, todo esto teniendo en cuenta el interés público y sin distorsionar el comercio ni las inversiones.

**6º** – Que es necesario también orientar las políticas sobre el manejo de residuos para que se aplique el principio general de derecho ambiental de la responsabilidad extendida del productor, definido como la responsabilidad del productor sobre los impactos sanitarios y ambientales de su producto a través de todo el ciclo de vida del

mismo, incluyendo los impactos relativos al uso y disposición de estos. Con este principio se busca: a) un desplazamiento gradual pero consistente de la responsabilidad del manejo de este tipo de residuos desde el sector público hacia los productores y consumidores; b) que los residuos electrónicos al derivarse de una actividad de consumo particular por parte de personas físicas y jurídicas que utilizan equipos electrónicos, deben como generadores del residuo, entregarlos en los sitios de recolección autorizados, cuando requieran cambiarlos o deshacerse de ellos.

7º – Que diferentes informes técnicos tales como a) Reporte Nacional de Materiales, elaborado en el marco del Programa Ambiental Regional para Centroamérica, Diciembre 2002, b) Estrategia Nacional para el Manejo Integrado y Sostenible de Residuos de Artefactos Eléctricos y Electrónicos, elaborada en el marco del proyecto del mismo nombre mediante el Convenio Bilateral para el Desarrollo Sostenible Costa Rica-Holanda, 2004; demuestran que parte del manejo ambientalmente adecuado de los residuos electrónicos, objeto de esta regulación, es posible realizarlo en el territorio nacional y que existen instrumentos económicos que podrían ser utilizados según corresponda y que han demostrado ser eficaces para el sostenimiento de un sistema de manejo de residuos electrónicos.

8º - Que es necesario influir en el diseño de los equipos electrónicos a fin de que éstos disminuyan el uso de metales pesados perjudiciales para la salud y el ambiente, se alargue la vida útil de dichos equipos, se facilite su desmontaje, reparación y/o valorización de sus materiales.

**Por tanto,**

## **DECRETAN**

### **REGLAMENTO DE CREACIÓN DEL SISTEMA NACIONAL PARA LA GESTION DE RESIDUOS ELECTRÓNICOS**

#### **CAPÍTULO I DISPOSICIONES GENERALES**

##### **Artículo 1º – Objetivos.**

Los objetivos del presente reglamento son:

- a) Reducir la contaminación al ambiente que provoca el manejo inadecuado de residuos electrónicos;
- b) Establecer la responsabilidad del manejo de estos residuos a sus productores;
- c) Minimizar la cantidad de residuos electrónicos generados, tanto en peso como en volumen, así como en relación a su potencial contaminante mediante la recolección segregada, recuperación, el reuso y reciclaje de materiales residuales.

##### **Artículo 2º - Ámbito de aplicación.**

Quedan dentro del ámbito de aplicación de este Reglamento los residuos de todos los equipos indicados en el Anexo I que sean introducidos, ensamblados o fabricados en el territorio nacional, sin perjuicio de que el Ministerio de Salud o el Ministerio de Ambiente y Energía, previa consulta con los sectores involucrados y justificación técnica, puedan en el futuro extender el listado a otros equipos electrónicos.

##### **Artículo 3º – Definiciones.**

A efectos de lo dispuesto en el presente reglamento se entenderá por:

- a) Equipo electrónico: Equipo que utiliza electricidad y está listado en el anexo 1 de este Reglamento.
- b) Equipos históricos: Aquellos equipos electrónicos incluidos en este reglamento, que se encuentran en el mercado al momento de la entrada en vigencia del mismo.
- c) Equipos huérfanos: Aquellos equipos electrónicos incluidos en este reglamento, que no se encuentran amparados por una marca comercial o cuyo productor ya no existe en el mercado.
- d) Caracterización: determinación cuantitativa y cualitativa de la naturaleza de un residuo, para establecer las vías de gestión más adecuadas para su valorización o tratamiento.
- e) Ciclo de vida: fases consecutivas e interconectadas del sistema de un producto, desde la adquisición de la materia prima y uso de recursos naturales hasta la disposición final.
- f) Comercializador: Cualquier persona física o jurídica que suministra en condiciones comerciales un equipo de los contemplados en el anexo I del presente reglamento.
- g) Consumidor Final: Toda persona física o jurídica, pública o privada, que genera residuos electrónicos a través del consumo de los mismos, cuando éstos llegan al final de su vida útil.
- h) Gestión Integral de Residuos: Conjunto articulado e interrelacionado de acciones regulatorias, operativas, financieras, administrativas, educativas, de planificación, monitoreo y evaluación para el manejo de los residuos, desde su generación hasta la disposición final.
- i) Gestor: Persona física o jurídica, pública o privada, encargada de la gestión total o parcial de los residuos electrónicos y autorizada conforme a lo establecido en la legislación nacional.
- j) Manejo integral: Medidas técnicas y administrativas para cumplir con los mandatos de este reglamento.
- k) Plan de Cumplimiento: Documento mediante el cual las unidades de cumplimiento establecen el conjunto de programas y acciones específicas, a través de las diferentes etapas de producción, comercialización y tratamiento del equipo que genere el residuo electrónico, con lo cual se pretende cumplir con los indicadores de cumplimiento respectivos.
- l) Productor: Toda persona física o jurídica que fabrique, importe y distribuya con fines comerciales cualquiera de los equipos incluidos en el anexo I del presente reglamento, incluida la venta a distancia o electrónica. En caso de duda, se entenderá como el productor aquel que introdujo por primera vez un equipo electrónico en el mercado nacional.
- m) Residuos ordinarios: Residuos de origen principalmente domiciliario o que provienen de cualquier otra actividad comercial, de servicios, limpieza de vías y áreas públicas, pero que tengan características similares, siempre que no sean considerados por la legislación pertinente como residuos de manejo especial. (ES LA DEFINICION DEL PROYECTO DE LEY)

- n) Residuos electrónicos: Cualquier equipo, elemento o componente residual que sea parte integral de un equipo electrónico que esté listado en el Anexo I.
- o) Responsabilidad extendida del productor: Los fabricantes, importadores y distribuidores de productos tienen la responsabilidad sobre los impactos ambientales de su producto a través de todo el ciclo de vida del mismo, incluyendo los impactos inherentes a la selección de los materiales, impactos del proceso de producción de los mismos, así como los impactos relativos al uso y la disposición de éstos.
- p) Tratamiento: Cualquier actividad posterior a la entrega de los residuos electrónicos a un procesador de residuos para su descontaminación, desmontaje, trituración, valorización o preparación para su eliminación segura.
- q) Unidades de Cumplimiento: Es la agrupación de uno o más productores de equipos electrónicos con el fin de cumplir sus responsabilidades según los lineamientos técnicos y ambientales establecidos por el Sistema Nacional de Gestión Integral de Residuos Electrónicos.
- r) Valorización: Conjunto de acciones asociadas cuyo objetivo es recuperar el valor de los residuos electrónicos para los procesos productivos, la protección de la salud y el ambiente.

## **CAPÍTULO II DE LAS OBLIGACIONES**

**Artículo 4º – De los productores:** El productor será responsable de los equipos electrónicos al final de su vida útil, y deberá tomar las medidas necesarias para darle a los mismos un reuso, valorización o disposición final que no afecte el ambiente y deteriore la calidad de vida de la población.

Para tales efectos deben cumplir con los indicadores de cumplimiento definidos por el Sistema Nacional para la Gestión Integral de Residuos Electrónicos (SINAGIRE), ya sea individualmente o en forma grupal, según los acuerdos a que llegue con los demás productores y comercializadores de la misma rama de equipos electrónicos.

Para cumplir con dicha obligación, los productores deberán inscribirse ante el SINAGIRE bajo la figura de unidades de cumplimiento, por medio de una asociación, fundación, cooperativa, sociedad anónima o cualquier otra figura legal que consideren conveniente.

Deberán también informar a los consumidores finales sobre los criterios para una gestión integral de los equipos electrónicos al final de su vida útil y los sitios de recolección autorizados.

Asimismo, los productores deberán proporcionar a los gestores de residuos de equipos electrónicos, en la medida en que éstos lo soliciten, la oportuna información para el desmontaje que permita la identificación de los distintos componentes y materiales susceptibles de valorización, así como la localización de los materiales peligrosos. Los importadores y distribuidores que no tengan dicha información la deben solicitar a su casa matriz o al fabricante en el país de origen del equipo.

**Artículo 5º – De los consumidores finales:** Los consumidores finales son responsables de entregar los residuos electrónicos en sitios de recolección autorizados, al proceder a la sustitución o eliminación de su equipo en forma total o

parcial; y deben contribuir con la sostenibilidad económica del tratamiento, tanto para residuos históricos como de los residuos electrónicos que se generen a partir de la aplicación del presente reglamento.

**Artículo 6º – De los gestores:** Las personas físicas o jurídicas dedicadas al tratamiento de los residuos electrónicos deberán estar debidamente registradas ante el Ministerio de Salud y cumplir con la legislación nacional, garantizando una disposición ambiental y sanitariamente segura de los mismos.

Deberán mantener un sistema de registro del movimiento de los residuos electrónicos a través de contratos y manifiestos de entrega-transporte-recepción. Las unidades de cumplimiento podrían ser consideradas como responsables solidarios de los daños al ambiente y la salud que pueda ocasionar los gestores si éstos realizan un manejo inadecuado de los mismos, además de otras sanciones que resulten aplicables.

Los sitios de recuperación que utilicen los gestores deberán cumplir con la normativa nacional y realizarán el almacenamiento y transporte con uso de un manifiesto de carga a los sitios de tratamiento, en forma individual o a través de convenios o contratos con personas físicas o jurídicas. Deberán mantener los registros de manifiesto de carga por cinco años.

**Artículo 7º – De los comercializadores:** Los comercializadores al detalle de equipos electrónicos o sus partes tienen la obligación de recibir de los consumidores finales en forma gratuita aquellos equipos incluidos en el Anexo 1 al final de su vida útil y direccionar éstos hacia las unidades de cumplimiento, gestores autorizados o sitios de recolección autorizados.

**Artículo 8º – De la donación de equipos:** Cualquier persona física o jurídica que done equipos electrónicos nuevos o usados a otra, será responsable de garantizar que al final de su vida útil, éstos sean entregados por el donatario a un gestor autorizado, caso contrario el donante deberá recibirlos de vuelta para asegurar su valorización o disposición final adecuada. En el documento de acuerdo entre las partes donde se formalice la donación, se podrá trasladar la responsabilidad al donatario para garantizar su valorización o disposición final adecuada.

### **CAPÍTULO III MANEJO DE LOS RESIDUOS ELECTRÓNICOS**

**Artículo 9º – Del manejo:** Todo residuo electrónico debe manejarse de forma tal que cause la menor contaminación ambiental posible y se aproveche al máximo el valor económico del mismo en todas las etapas de su ciclo de vida y en estricto apego a la normativa relacionada a la acumulación, almacenamiento, transporte, tratamiento y disposición final de residuos.

**Artículo 10º – De la separación:** Tanto los productores, los comercializadores, los consumidores finales, los gestores, así como las autoridades públicas y las municipalidades deben realizar las acciones necesarias para que los residuos electrónicos no ingresen dentro de la corriente de los residuos ordinarios, sino que sean separados y entregados en puntos de recolección autorizados o a gestores autorizados.

### **CAPITULO IV**

## **CREACIÓN DEL SISTEMA NACIONAL PARA LA GESTIÓN INTEGRAL DE LOS RESIDUOS ELECTRÓNICOS**

**Artículo 11<sup>o</sup> – Del SINAGIRE:** Créase el Sistema Nacional para la Gestión Integral de los Residuos Electrónicos (SINAGIRE) definido como el conjunto de acciones desarrolladas para lograr la gestión integral de los residuos electrónicos, con el fin de proteger el ambiente y la salud de la población.

**Artículo 12<sup>o</sup> – Del Comité:** El SINAGIRE estará conformado por un comité ejecutivo integrado por representantes del Ministerio de Salud, el Ministerio del Ambiente y Energía y la Dirección General de Aduanas del Ministerio de Hacienda, así como por un representante de cada uno de los siguientes sectores: las unidades de cumplimiento, del Consejo Nacional de Rectores (CONARE), la Unión Costarricense de Cámaras y Asociaciones de la Empresa Privada (UCCAEP), las organizaciones no gubernamentales y los gestores autorizados. Este comité será coordinado por el Ministerio de Ambiente y de Energía, quien definirá los mecanismos para el nombramiento de los integrantes del Comité.

**Artículo 13<sup>o</sup> – Funciones:** El Comité Permanente del SINAGIRE tendrá las siguientes funciones:

- a) Promover la gestión integral de los residuos electrónicos.
- b) Elaborar de las guías técnicas y ambientales necesarias para la operación del sistema, incluyendo los formularios de registro, formatos de reportes, informes anuales y manifiesto de carga y la definición de los estándares del proceso de valorización.
- c) Mantener un registro actualizado de las unidades de cumplimiento.
- d) Recibir y verificar los planes de cumplimiento de las unidades de cumplimiento.
- e) Mantener un registro de los gestores.
- f) Definir y revisar en forma periódica los indicadores de cumplimiento y el listado de equipos incluidos en el anexo 1.
- g) Velar por la sostenibilidad del sistema.
- h) Procesar, analizar y divulgar la información que genere el sistema.
- i) Desarrollar las acciones orientadas a la información y educación de los diferentes sectores.
- j) Aplicar incentivos y reconocimientos para los diferentes actores.
- k) Desarrollar acciones para que los residuos históricos y huérfanos sean asumidos por el sistema.

**Artículo 14<sup>o</sup> – Responsabilidades de las Unidades de Cumplimiento:** Las unidades de cumplimiento tendrán las siguientes responsabilidades:

- a) Registrarse ante el SINAGIRE.
- b) Elaborar e implementar el Plan de Cumplimiento.
- c) Garantizar el manejo integral de los residuos electrónicos, en estricto cumplimiento de la normativa vigente.
- d) Elaborar informes anuales de los avances del Plan de Cumplimiento.
- e) Desarrollar las actividades necesarias para cumplir con los requerimientos del presente reglamento.
- f) Garantizar que se alcancen las metas asociadas a los indicadores de cumplimiento.
- g) Definir la forma de identificación de sus equipos electrónicos de manera que se garantice su tratamiento adecuado.
- h) Diseñar e implementar el mecanismo financiero que sostenga los procesos de recuperación y procesamiento.

## **CAPITULO V CONTROL Y VIGILANCIA**

**Artículo 15<sup>o</sup> – De la implementación del Plan de Cumplimiento:** Las unidades de cumplimiento deberán presentar ante el SINAGIRE un Plan de Cumplimiento. Este plan deberá estar implementado en un plazo no mayor a 4 meses a partir de su inscripción en el SINAGIRE.

**Artículo 16<sup>o</sup> – Del contenido del Plan de Cumplimiento:** El Plan deberá contener una descripción y listado de los asociados de la unidad de cumplimiento, naturaleza y cantidad de los equipos que comercializan, registro de puntos de recolección y los gestores que proveen el servicio a la unidad de cumplimiento, así como el mecanismo financiero que garantice la sostenibilidad económica del Plan.

**Artículo 17<sup>o</sup> – Verificación de la Implementación del Plan cumplimiento:** El SINAGIRE verificará la implementación del Plan de cumplimiento en el sitio, el cual deberá estar a disposición de los funcionarios del Ministerio de Salud y del Ministerio del Ambiente y Energía en el momento en que lo soliciten.

**Artículo 18<sup>o</sup> – Sobre el desalmacenaje de equipo:** Todo productor para desalmacenar los equipos incluidos en el Anexo 1 debe acreditar su pertenencia a una Unidad de Cumplimiento.

## **CAPÍTULO VI DISPOSICIONES FINALES**

**Artículo 19<sup>o</sup>– De las prohibiciones:** Queda absolutamente prohibido:

- a. Disponer finalmente de residuos electrónicos en sitios no autorizados;
- b. Recibir residuos electrónicos sin ser un gestor autorizado por el SINAGIRE;
- c. Comercializar en el territorio nacional equipos electrónicos definidos en el Anexo 1, sin estar registrado como unidad de cumplimiento;
- d. Importar residuos electrónicos que no puedan ser valorizados en el país o cuyo destino sea la disposición final.

**Artículo 20<sup>o</sup>– Vigencia:** Este reglamento rige a partir de su publicación.

## **CAPÍTULO VII DISPOSICIONES TRANSITORIAS**

**Transitorio I** - El Ministerio de Ambiente y Energía contará con un máximo de dos meses para conformar el Comité Ejecutivo del SINAGIRE a partir de la publicación del presente Reglamento.

**Transitorio II** – El Comité Ejecutivo deberá contar con las guías técnicas y ambientales necesarias para la operación del sistema, en un plazo no mayor de tres meses contados a partir de su conformación.

**Transitorio III** - Los productores de equipos electrónicos contemplados en el anexo 1 del presente reglamento dispondrán de un máximo de dos meses para registrarse bajo la forma de unidad de cumplimiento, una vez definidos los mecanismos de registro establecidos en las guías técnicas.

Dado en la Presidencia de la República- San José, a los XXXXXXXXX  
XXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXX  
MINISTRA DE SALUD

XXXXXXXXXXXXXXXXXXXXX  
MINISTRO DE AMBIENTE Y ENERGÍA

**ANEXO I**

**Listado de Equipos Electrónicos regulados en el presente reglamento**

- Monitores enteros y pantallas planas;
- Computadoras portátiles y de escritorio (incluye sus accesorios);
- Baterías: de computadoras portátiles, de teléfonos celulares y unidades de suministro ininterrumpido de energía (UPS);
- Cargadores;
- Escáner;
- Teléfonos celulares;
- Impresoras;
- Fotocopiadoras;
- Cámaras fotográficas digitales;
- Asistente portátil digital (PDA);  
Equipos de oficina multifuncional (impresora, copiadora y fax



**Anexo 3**  
**Informe Final**  
**Organismo de financiamiento**  
**Acuerdo bilateral en Desarrollo Sostenible**  
**Costa Rica-Holanda**

**Bilateral Agreement on  
Sustainable Development  
Costa Rica ~ The Netherlands  
FUNDECOOPERACION**

**Bilateral Project**

Implementation and strengthening of systems that guarantee a responsible management of waste from electronic and electric equipment, in Costa Rica and The Netherlands.

30 October 2007

**Project 556-435**  
**VOLUME 1. NARRATIVE REPORT 5**  
**January – October 2007, and FINAL**  
**REPORT**

**and**

**FINAL FINANCIAL REPORT**  
**January – October 2007**



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## **FOREWORD**

The present narrative report presents the description of the activities that have been executed during the period January through October 2007, **Project 556-435: “Implementation and strengthening of systems that guarantee a responsible management of waste from electronic and electric equipment, in Costa Rica and the Netherlands”**.

The project is financed through the bi-lateral Sustainable Development Agreements (SDA) between Costa Rica and the Netherlands, which is administered by the Netherlands International Partnership for Sustainability (NIPS) of the Royal Tropical Institute (KIT) in the Netherlands and Fundecooperación in Costa Rica.

The project has been executed and coordinated by ACEPESA in Costa Rica and WASTE in the Netherlands.

# Introduction

## ***Introduction***

This first chapter presents the general information on the project as a reference. For each of the countries, Costa Rica and The Netherlands, we present the activities for each planned objective and each planned activity. Chapter 2 reports on the four activities, Objectives 1, 2, 3, and 5, which are managed by ACEPESA, and are focused primarily on activities taking place in Costa Rica. Chapter 3 reports on Objective 4, activities taking place in the Netherlands and implemented primarily by WASTE. Chapter 4 returns to the project as a whole, and presents the main achievements and barriers encountered in this period, and approaches to overcome the barriers. Chapter 5 presents plans for the coming period.

## ***General information of the project***

### **Title of the Project:**

“Implementation and strengthening of the systems that guarantee a responsible management of waste from electronic and electric equipment, in Costa Rica and the Netherlands ”.

### **Lead Organisation:**

WASTE Advisers on Urban Environment and Development, The Netherlands

### **Implementing Organisations:**

- ◆ WASTE Adviser on Urban Environment and Development, The Netherlands
- ◆ Central American Association for economy, health and environment- ACEPESA, Costa Rica
- ◆ Chamber of Industries, Costa Rica
- ◆ Technological Institute of Costa Rica

## ***Objectives***

### **General Objective**

To implement and strengthen systems that guarantee / safeguard a responsible management of WEEE, in Costa Rica and the Netherlands, by means of supporting the process of implementation and consolidation of the National Strategy of Costa Rica for Integrated Sustainable Waste Management of WEEE and the strengthening of the actions directed at minimization and reduction of WEEE in the Netherlands.

### **Specific objectives**

The specific objectives of the project are:

1. To support and strengthen the development of private and public institutional processes that are needed for the implementation of the strategy in Costa Rica.
2. To strengthen the entrepreneur initiatives in recovery and recycling of WEEE, as well as the reparation and re-use of electronic equipment and components; striving that the project benefits both enterprises constituted by male and female employees as well mixed enterprises.

3. To inform and sensitise the public, so that they participate in accordance with their responsibility, in the process of implementation and consolidation of the National Strategy of Costa Rica for Integrated Sustainable Waste Management of WEEE, considering the perspective of gender.
4. To strengthen actions in the Netherlands that support lengthening useful life in the Netherlands, and the responsible refurbishment and selling within the Netherlands or for export of used electronic and electric equipment and components.
5. To systematise and publish the methodology used for the formulation and implementation of the National Strategy in Costa Rica and disseminate this publication at national level in Costa Rica and amongst government institutions and relevant private and public sector institutions in Central America, Bhutan and Benin.

### **Relation Phase 1 and 2**

The goal of the project is to support a platform of stakeholders in Costa Rica to arrive at an efficient, effective, equitable, and sustainable approach to the management of waste from electronic and electric equipment (WEEE) with support from stakeholders and specialists in the Netherlands. The project is based on using the framework of Integrated Sustainable Waste Management (ISWM). In the first phase, a general assessment was done, both of the situation in Costa Rica and the system for WEEE in the Netherlands, and a group of key Costa Rican stakeholders visited the Netherlands to understand the system better. These stakeholders from the public and private sector and civil society worked together, and with their constituencies, to develop a vision of a WEEE management system that would fit Costa Rican circumstances and solve key problems.

This second phase of the project is designed to support those same stakeholders and their constituencies in a practical implementation of a management system for WEEE. The conceptual framework for Phase II is stakeholder-oriented: Objective 1 supports development of public and private sector institutions for the long-term management of the logistics, finances, and environmental effects of WEEE disposal and recycling. Objective 2 focuses on the meso-level institutions and the practical activities of recycling: its primary focus is municipalities, small private sector recyclers and recycling centres on the one hand, and their employees and personnel on the other. Objective 3 is focused on the users of WEEE and the solid waste system, so its focus is yet more micro and individualised. Objective 5 also has a stakeholder focus, it involves systematising the methodology and preparing a case study from the results, and so provides a link to local stakeholders, but also to practitioners, local and national authorities, universities, and computer and ICT businesses.

Objective 4 looks at these stakeholders and their activities in the Netherlands, and seeks to stimulate a discussion about some key issues that the Dutch system still has not fully resolved.

### **A note on the report**

To the considerable surprise of WASTE, the proposed transition of project administrative responsibility from KIT to Fundacooperación was cancelled after the submission of the 2006 reports. Therefore this report is in English only. This is also the reason for reporting for a

period less than the full year of 2007. In consultation with KIT all activities ceased on 31 October 2007, so that KIT can close the project before the end of 2007.



## **Project description (from Proposal)**

### **Specific objective 1**

<b>Specific objective 1:</b> To support and strengthen the development of private and public institutional processes that are needed for the implementation of the strategy in Costa Rica.		
<b>Actions</b>	<b>Component of the strategy</b>	<b>Expected Results and products</b>
1.1. To execute the legislation related to WEEE with the publication and dissemination of the Executive Decree "For the Creation of System for the Management of Special Waste, through the use of economic instruments", approved by the Ministry of Environment and Energy (MINAE) of Costa Rica.	Legal / institutional	The Executive Decree proposal is published and disseminated amongst the private sector and individual entrepreneurs involved.
1.2. To institutionalise within the Ministry of Environment and Energy of Costa Rica the supervision process of the implementation of the Executive Decree.	Legal / institutional	Supervision process institutionalised.
1.3. Design and implementation of a monitoring and supervision system to assure the compliance with the Executive Decree.	Legal / institutional	Supervision and monitoring system designed and implemented.  Staff trained.
1.4. To support the business organisation in the creation, training and strengthening of the Management Entity, created by the private sector to comply with its responsibilities related to the collection and appropriate treatment of the WEEE as established in the Executive Decree.	Institutional	Management Entity consolidated The strategic plan of the Management Entity elaborated in a participative manner.  Training done of staff responsible for the implementation of the activities.
1.5. To design and implement a pilot plan for the collection and treatment of a selection of the historic WEEE.	Technical / operational	Pilot plan for collection and treatment for a selection of historic WEEE designed and implemented. Implementation of Pilot Plan evaluated..
1.6. To design and implement the collection plan and treatment plan of the historic WEEE.	Technical / operational	Collection plan and treatment plan for the historic WEEE designed and implemented. Proposal for financing mechanism for the processing of the historic WEEE elaborated and implemented.
1.7. To design and implement the collection system and treatment of actual WEEE.	Technical / operational	Collection and treatment system designed and implemented.
1.8. To design and implement a registration and monitoring system for electronic equipment imported into Costa Rica.	Technical / operational and institutional	Registration and monitoring system for electronic equipment designed and in operation
1.9. To design and implement a financing and fee collection system for treatment services of WEEE.	Legal-financial / institutional	Financing and fee collection system for treatment services of WEEE designed and implemented.

Specific objective 1: To support and strengthen the development of private and public institutional processes that are needed for the implementation of the strategy in Costa Rica.		
1.10. To formalise and strengthen the channels of communication and exchange with Dutch institutions active in the management of WEEE.	Technical / operational and Institutional	Channels of communication and exchange formalised and strengthened.

## Specific objective 2

Specific objective 2 To strengthen the entrepreneur initiatives in recovery and recycling of WEE, as well as the reparation and re-use of electronic equipment and components; striving that the project benefits both enterprises constituted by male and female employees as well mixed enterprises.		
Actions	Component of the strategy	Expected Results and products
2.1. To identify entrepreneurs interested in installing and operating a de-assembly factory for WEEE equipment; through the preparation of technical selection criteria.	Technical / operational	Technical selection criteria prepared for the de-assembly factory.
2.2. Design, construction and installation of the de-assembly factory	Technical / operational	De-assembly factory designed, constructed and installed for operation
2.3. To provide technical assistance to strengthen the actual waste collection and transportation system to incorporate the fraction of WEEE.	Technical / operational	Plan in operation to strengthen the incorporation of the WEEE fraction in the actual waste collection and transportation system.
2.4. To design and provide technical support for the manufacturing of packaging units to store and transport WEEE.	Technical / operational	Packaging units to store and transport WEEE manufactured.
2.5. To design and implement an improvement plan for the infrastructure and operation of the in-take centres of WEEE equipment selected within the frame work of the strategy.	Technical / operational	Improvement needs identified. Improvement plan designed and implemented.
2.6. To design and implement a promotion and commercialization plan for components and recyclable materials of WEEE.	Technical / operational and Institutional	Promotion and commercialization plan designed and implemented.
2.7. To train and provide capacity building to repair workshops of electronic equipment in technical, environmental and occupational health and security issues, taking into account the aspect of gender in the methodology and the training materials.	Technical / operational	Capacity building programme designed and implanted.
2.8. To provide technical assistance to the branch organisations representing the repair workshops of electronic equipment in the design and implementation of quality control and self-regulation systems of their services.	Technical / operational	Quality control and self-regulation systems designed and implemented.

### Specific objective 3

Specific objective 3		
To inform and sensitise the public, so that they participate in accordance with their responsibility, in the process of implementation and consolidation of the National Strategy of Costa Rica for Integrated Sustainable Waste Management of WEE, considering the perspective of gender.		
Actions	Component of the strategy	Expected Results and products
3.1. To strengthen the National Technical Commission for WEEE in its role as intermediary and advisory entity between the private sector and the organisations from civil society	Institutional	National Technical Commission for WEEE strengthened; its strategic and action plan developed and implemented.
3.2. To design and implement an information and awareness raising programme to encourage re-use and repair of electronic equipment as well as adequate disposal of WEE, taking the gender aspect into consideration.	Institutional/ Social cultural	Information and awareness raising programme designed and implemented.
3.3. Dissemination of the results of the first phase of the project	Institutional/ Social cultural	Results of the first phase of the project disseminated

### Specific objective 4

Specific Objective 4 <sup>1</sup>		
To strengthen actions in the Netherlands that support lengthening useful life in the Netherlands, and the responsible refurbishment and selling within the Netherlands or for export of used electronic and electric equipment and components		
Re-written actions	ISWM component	Expected Results and Products
4.1. To develop and organise discussions, and if necessary dissemination and awareness-raising actions, with municipalities in the Netherlands to promote actions and materials that extend the useful life of electronic equipment, and, when it can no longer be used for its original purpose, support further reuse refurbishment, and other strategies, including responsible export	Institutional/ social- cultural, environmental - health	Dissemination and awareness-raising campaign and/or public actions implemented. Identification of two municipalities who want to work more intensively on this topic together with their sister cities, Organisation and leading of a discussion with these municipalities and sister cities on priorities. A “white paper” on responsible export from the point of view of the municipalities in the Netherlands is produced and disseminated.
4.2. To co-operate with municipalities and the Association of Dutch Municipalities in the Netherlands (VNG) to document their experiences with the relationship between the use of “open source” computer programmes in municipalities with the length of life of electronic equipment.	Technical/ institutional/ financial	A white paper is produced on the potential relationship between the use of open source software and the length of life of WEEE in the Netherlands, based on existing research, or, in case of a lack of such research, the paper will offer a review of the literature and a research design.

<sup>1</sup> re-written December 2005, approved January 2006

Re-written actions	ISWM component	Expected Results and Products
4.3. To invite participation of key WASTE partners in the South to join the discourse on sustainable or responsible export of used electronic equipment, in the light of ongoing debates about computer literacy, connectivity, and related issues.	Social-cultural, economic-financial, political-legal	Partner organisations in India, Eastern Europe, Philippines, West and East Africa and Latin America are invited to join an email discussion. A “white paper” on responsible export from the point of view of Southern recycling and other stakeholders is produced and disseminated.
4.4. Facilitation of a discussion on responsible export in co-operation with key Dutch stakeholders, including the incorporation of concepts of repair, reuse and refurbishment in the discussion.	Institutional/socio-cultural/financial-economic/environmental-health	A public debate is organised between and among key Dutch stakeholders on the role of export in responsible end-of-life management of WEEE after its original owner is finished with it. A summary of the debate is published and disseminated. Dutch and European media is invited to the public debate and reports on it.

## Specific objective 5

Specific objective 5		
To systematise and publish the methodology used for the formulation and implementation of the National Strategy in Costa Rica and disseminate this publication at national level in Costa Rica and amongst government institutions and relevant private and public sector institutions in Central America, Bhutan and Benin.		
Actions	Component of the strategy	Expected Results and products
5.1. Systematization of the methodology in English	Institutional	Methodology used systematised in English
5.2. Translation of the methodology document into Spanish and French	Institutional	Methodology translated into Spanish and French
5.3. Publication of the methodology on CD and distribution in Costa Rica, The Netherlands, Benin, Bhutan and Central America.	Institutional	At least 250 CD-Roms with publications distributed to relevant organisations in Costa Rica, The Netherlands, Benin, Bhutan and Central America

## Closing the SDA-WEEE Project

### Summary of the Situation and Results

This report is the final of Phase 2, and also completes the second of the two WEEE projects. The specific results of both projects in Costa Rica are described in greater detail in the main information document resulting from the project: the Systematisation of the Methodology. This document and presentations from the closing meeting are included as annexes on a CD-Rom. The Systematisation is also provided in one hard copy.

### Inputs

The project has operated since 2005 with a variety of inputs, from many sources, including:

1. project budget from the Sustainable Development Agreements
2. very substantial inputs of time and resources from all of the members of the Technical Committee in Costa Rica, which are presented in the Financial Report
3. substantial inputs of financial resources from INTEL, that has a computer chip factory in Costa Rica. INTEL has paid for processing of part of the WEEE collected in the project, and has provided additional support through volunteers at the collection events, technical assistance, consultation, and use of its corporate contact network. Other private companies

had given financial resources for the last collection event, like Fortech (a WEEE dismantling enterprise), Geocycle from Holcim that supported the logistics of the collection and the supermarket chain Price Smart that gave space in the parking lot of four facilities.

4. co-financing from the Collaborative Working Group on Solid Waste in low- and middle-income countries (the CWG) for the closing meeting and the replication of the beginning of the process of developing sustainable WEEE management in Panama and El Salvador.

5. co-financing from the Project “e-waste regional Platform” to support also the processes in el Salvador and Panama, and the beginning of a similar process in Nicaragua.

## **Outputs**

Specific outputs that can be accredited directly to project activities include:

1. One multi-stakeholder platform that contributes to the overall objective of the project, in the form of the Technical Committee;
2. One final decree, as prepared by the Technical Committee for the Ministry of Health and the Ministry of Environment and the cost benefit analysis made that resulted positive for the implementation;
3. Regular meetings (on a monthly basis) of the Technical Committee;
4. One Central American workshop in Costa Rica, in October 2007;
5. Three WEEE collection Events in Costa Rica;
6. One disassembly line at the Technical University of Costa Rica;
7. Three study visits by representatives of the Technical Committee: one to London, in February 2007; one to the Netherlands, Belgium and England, in June 2007 and one to Canada in July 2007;
8. The initial conformation of the compliance scheme in Costa Rica, on a voluntary basis with the participation of electronics importers of PC, photocopiers, television, mobile phones and printers;
9. One discussion session on Responsible Export, in May 2006;
10. One E-discussion on Responsible Export, in November 2006;
11. One document ‘Systematization of the Methodology’, that is available in English, Spanish, and French;
12. One paper on perspectives of stakeholders on export of WEEE;
13. One case study on re-use of EEE in schools.

## **Results**

Project results are considered here as effects that are clearly linked to the project outputs, and that take place within the project time-frame. The results include, among others:

1. The multi-stakeholder Technical Committee, is fully committed and has full ownership of the process initially envisaged by the project, despite the legal framework not being into place at the end of the project;
2. The Costa Rican Government has show specific commitment by establishing a national system for integrated management of WEEE, under the name SINAGIRE;
3. Chip manufacturer INTEL and other private enterprises have shown specific commitment by providing financial support in pilot-projects for disassembly, transport and responsible end-processing of WEEE;
4. The Technical Committee has very much increased its experience with organising collection of WEEE in Costa Rica and with selecting appropriate disassembly and international processing options;

5. The e-waste topic is considered in the national agenda, this is evident as it is part of the national plan for solid waste management, which was formulated this year. Another evidence is the attention that mass media pay to the subject.
6. Both ACEPESA and WASTE have created a strong network with key-stakeholders that are active regionally and internationally in the issue of WEEE;
7. The project outputs are broadly disseminated to experts in the field of WEEE, individuals in Costa Rica, through networking, through attending and presenting results at international workshops, through local media in Costa Rica, and through the WASTE email bulletin, among others.

## **Impacts**

Project impacts are here considered as developments that have a longer effect on the WEEE situation, and are more likely to happen at the end of a project, or after the project has ended.

1. The input, outputs and results of the project already shown to have a regional impact, as was especially shown during the closing workshop in San José in October 2007. There is a strong interest from public workers and the private sector in Panama, El Salvador, Guatemala and Nicaragua to develop a similar multi-stakeholder process.
2. Two private companies in Costa Rica have adopted dismantling WEEE in their business line, and some other businesses have informally expressed interest in developing additional recycling activities in Costa Rica. The involvement of the private disassembly and recycling chain is pertinent for a successful WEEE take-back campaign, as it will (partially) provide financing for the take-back services.
3. International e-recycling companies have shown interest in Costa Rica, to form linkages with local enterprises that are executing initial dissembling of electronic waste equipment, in the form of a business association. In 2007, the National Technical Committee received visits of at least six international recycling companies from USA, Mexico and Canada showing interest in receive information about the national situation on e-waste and the possibility to invest in the country or in the Central American Region.
4. During the past two year university students showed increasing interests to do research or thesis on specific aspects of WEEE management: legal, technical, financial.

## **Sustainability**

Sustainability of the project is here divided into institutional sustainability, and financial sustainability.

A committed multi-stakeholder platform, that claims full ownership of the process, and with the document 'Systematization of the Methodology' supports the institutional memory of the process. While this project has ended, German Technical Cooperation (GTZ) has shown interest and commitment to continue and follow-up on the activities at the end level (see Annex 1 for a commitment letter from GTZ). Also, the increasing number of international networks will help to have specific knowledge is available and accessible for follow-up activities.

WASTE has put the issue of responsible and appropriate WEEE management on its organisational agenda, and has strong ambitions to use the knowledge generated through this project in follow-up activities.

It is at this point less sure whether the activities of take-back, transport, storage, disassembly and processing, and the monitoring and control of these processes, will be covered entirely

with financial inputs through the proposed fee system. The National Technical Committee is exploring, with the proposed compliance scheme to introduce an invisible fee system. Although it may seem that the consumer will not pay, the producer is likely to increase prices because of the fee. So, it is expected that the consumer will pay (at least partially) for responsible collection and treatment. At the same time, more local businesses will start to adopt disassembly or recovery of WEEE in Costa Rica, and it is likely this will contribute to the financial feasibility of a WEEE management system.

The institutional and financial sustainability of this project will also benefit when other countries in the Middle-Americas, and South-America will develop and implement a framework for take-back and processing of WEEE.





## Activities Managed by ACEPESA with a focus on Costa Rica

This chapter describes the activities managed by ACEPESA in Costa Rica during the Project. The activities, including activities by ACEPESA, WASTE, and the Technical Committee, fall under the specific objectives 1, 2, 3, and 5. Activity 4, co-ordinated by WASTE, is presented in Chapter 3.

### ***Specific Objective 1***

To support and strengthen the development of private and public institutional processes, that are needed for the implementation of the strategy in Costa Rica.

The source of verification of the activities listed below for Objective no. 1 are included as Annex 1 and include the following:

1. Final proposal of National Decree for e-waste management
2. Cost Benefit analysis of the National Decree
3. Schematic drawing of the proposed scheme
4. Report of the Study Visit to the Netherlands, Belgium and London (prepared by Technical Committee)
5. Report of the Study Visit to the Netherlands, Belgium and London (prepared by WASTE)
6. Report of the Study Visit to Canada
7. Presentation of Eugenio Androvetto of the Ministry of Health in the AIDIS (Asociación Interamericana de Ingeniería Sanitaria y Ambiental) Latin American Conference in Chile
8. Presentation of Maritza Marin of ACEPESA in the III Expoambiente Mesoamericana (Central American Environmental Fair) organise and funded by the CCAD (Central American Commission for Environment and Development)
9. Report of the workshop with the electronic importers – October 2007
10. Report of the meetings for the conformation of the Compliance Unit
11. Report of the Collection Event on 20 October 2007
12. Report of attendance at the Regional Event in Bolivia, 23-26 October 2007
13. Letter of commitment of the Director of the CYMA Programme – GTZ to continue the follow up and support to the WEEE Project
14. Report of the Closing Meeting, 29-30 October, 2007, San José, Costa Rica

## Expected results and Results at the Close of the Project

Actions	Expected results	Results at the Close of the Project
<p>1.1. To execute the legislation related to WEEE with the publication and dissemination of the Executive Decree “For the Creation of System for the Management of Special Waste, through the use of economic instruments”, approved by the Ministry of Environment and Energy (MINAE) of Costa Rica.</p>	<p>The Executive Decree proposal is published and disseminated amongst the private sector and individual entrepreneurs involved.</p>	<p>At the close of the project the situation is as follows:</p> <p>1. The Decree The decree is still not passed. The current and final version is the one that has been proposed by the Technical Committee. This version has been the subject of public commentary, and is waiting to be approved by the legal department of the Ministry of Health. After that, the Minister of Health will sign it. After that, it will be sent to the Ministry of Environment and Energy (MINAE) of Costa Rica, for final revision by their legal department and signature by the Minister. This situation is extensive to the Solid Waste Law Project that is being discussed in the Parliament. There have been many delays due to the process of decision of whose competence is the topic of waste management: the Ministry of Health (as traditionally) or the Ministry of Environment (the new proposal).</p> <p>The technical staff of the Ministry of Health made a cost-benefit analysis of the Decree and the result was positive.</p> <p>2. At the same time and in parallel to the project, ACEPESA has been participating on behalf of the Technical Committee in a pan-Latin-American initiative on E-waste. Victoria Rudin of ACEPESA attended a meeting in Bolivia from 23 to 26 October 2007, where a regional platform was formed with a goal of influencing ministers of Environment of all the Latin American region through the Organisation of American States and the Basel convention representatives to join a co-ordinated action on management of E-Waste, harmonizing principles and terms.</p> <p>3. Future plans after the end of the Project German Technical Cooperation (GTZ) in Costa Rica is continuing with support to the process and the Ministries. They have indicated that continuation of the legislative process is part of their general support to Costa Rican ministries for good governance. They will focus also, together with the Chamber of Industry, on supporting the recently formed compliance scheme (on a voluntary basis).</p> <p>In retrospect, it turned out not to be feasible (or wise) to have a legislative result as a project result.</p>
<p>1.2 To institutionalise within the Ministry of Environment and Energy of Costa Rica the supervision process of the implementation</p>	<p>Supervision process institutionalised.</p>	<p>Both Ministries are in a process of restructuring, the process of modernisation has actually caught up with the project, but too late to help the Decree in the framework of the project. That is, the Ministry of Health is at the point of project closing in the process of transferring all functions related to solid waste to the Ministry of Environment. So the situation has come full circle, because the responsibility will ultimately be with MINAE. This restructuring will ultimately facilitate the institutionalisation of WEEE management within the general subject of solid waste in Costa Rica, together with the Solid Waste Law and the Solid Waste National Plan.</p>

Actions	Expected results	Results at the Close of the Project
of the Executive Decree		<p>At this time MINAE is in the process of creating SINA GIRE (Sistema Nacional de Gestion Integral de Residuos Electronicos, National System for Integrated Management of WEEE). This is the government's approach to institutionalisation, and is the governmental platform for regulating the WEEE system. SINA GIRE will be born when the regulations that follow the Decree are put into effect. But even though it doesn't officially exist yet, SINA GIRE has a kind of virtual and symbolic existence that has already begun the process of institutionalisation.</p> <p>Also because the WEEE system now appears to be positioned as the first EPR covenant in Costa Rica, it will be positioned as an example for management of a great many other materials streams.</p>
1.3. Design and implementation of a monitoring and supervision system to assure compliance with the Executive Decree.	Supervision and monitoring system designed and implemented.	<p>In February 2007, the coordinator of the Technical Committee and WASTE visited London for a session organised by post-delivery system DHL and Department of Trade and Industry (DTI). The United Kingdom was at that point at the verge of implementing the EU WEEE Directive. The session provided an opportunity for businesses to discuss compliance to the national regulation. This visit further enhanced understanding of the WEEE Directive, its monitoring system, and the multi-stakeholder process designed by DTI in the UK – and supported the Technical Committee in developing the draft Decree.</p> <p>In May 2007, the Ministry of Health requested the Technical Committee to facilitate a Study Visit to the Netherlands and possibly to other countries in Europe as well. The Technical Committee, in turn requested WASTE to organise meetings with several stakeholders of the WEEE management process, with a specific focus on legal, financial and institutional aspects of the process. In the 2nd week of June, a group of 4 people (out of which 3 persons represented the Technical Committee) visited the Netherlands and the United Kingdom. The lessons-learnt from the Study Visit were used to improve the Decree proposal and in the design and implementation of a compliance unit and monitoring system. Point 1.10 will further provide information on stakeholders visited. Annex 1 includes a report from the study visit.</p> <p>In July, another member of the Technical Committee visited Canada to learn from the experience of the Canadian government and other stakeholders. This because there are some similarities between the Canadian provinces where a scheme has been implemented, and Costa Rica. In addition, there are two Canadian recycling companies that had show a serious interested in establishing business agreements with local companies for the treatment of the e-waste.</p> <p>At the close of the project, the monitoring system is still waiting for the decree.</p>

Actions	Expected results	Results at the Close of the Project
1.4 To support the business organisation in the creation, training and strengthening of the Management Entity, created by the private sector to comply with its responsibilities related to the collection and appropriate treatment of the WEEE as established in the Executive Decree	<p>Management Entity consolidated</p> <p>The strategic plan of the Management Entity elaborated in a participative manner.</p> <p>Training done of staff responsible for the implementation of the activities.</p>	<p>The most significant result of the study visit to the UK was a fundamental shift in the ideas about compliance in Costa Rica. Whereas the original proposal, and all additional development, was based on the idea of a single management entity, on the model of ICT Milieu, the experience and observations in the UK with multiple compliance organisations has changed the plans in Costa Rica to resemble this system more closely.</p> <p>The final proposal for the legislation contains this radically updated concept for compliance: importers , have the option to form separate compliance organisations or join together in a single compliance organisation. This shift is a practical example of how the changing circumstances in Europe are influencing the project, even though the legislation is not finished. Also it was very important to understand the financial system, after the evaluation of the advantages and disadvantages of the visible and invisible fee.</p> <p>The situation at the close of the project is that the private sector actors are prepared to go ahead with voluntary actions to begin the process while they are waiting for the ministries to sort their jurisdictions out in the course of the re-organisation.</p>
1.5 To design and implement a pilot plan for the collection and treatment of a selection of the historic WEEE.	<p>Pilot plan for collection and treatment for a selection of historic WEEE designed and implemented.</p> <p>Implementation of Pilot Plan evaluated..</p>	<p>The first two pilot plan collections in 2005 were focused on the technical issues, and were located at the Technological Institute and in one municipality, Escazu. In 2007 a third pilot collection was organised based on collection at large retailers. This decision was in part due to the realisation in the project that retailers and especially warehouse-type discounters, together with the importers, are key stakeholders whose participation is essential (this decision is related to the realisation in 2006 of the importance and under-representation of the Chamber of Commerce and its members, which was reported in the Annual Report 2006).</p> <p>In response to a request Price Smart, a large American chain, agreed to hold the collection event on 20 October in its four stores in the San Jose metropolitan area that covers four different municipalities. The event was held on a single day based on insights from the two events held in 2005, but also because Price Smart as the host was willing to commit its staff on only one day.</p> <p>An invitation for processing was awarded to one of the two processors of E-waste now operating, Fortech in Cartago. It is interesting to note that the availability of two processing organisations is in part also an impact of the project. Interest generated by the project resulted in two quite different organisations, Servicios Ecologicos, a traditional recycling organisation, and Fortech, a recycler of solvents and hazardous wastes, entering the E-waste management market. this was also a change from the first collection event, because it had the interest to test the private capacity to transport, dismantle and treat the e waste collected.</p> <p>The event collected 60 tons of materials in one day, a total of about 7.000 pieces. The enormous response was much more than anticipated, and gives a clear signal to the Technical Committee that there is great readiness for implementation of the final system.</p>
1.6 To design and implement the collection plan and treatment plan of the historic WEEE.		<p>One of the aims of the collection event was to collect historic WEEE. But because of the delay in the decree, there was no further action up until the end of the project.</p>

Actions	Expected results	Results at the Close of the Project
1.7 To design and implement the collection system and treatment of actual WEEE.		<p>The National Technical Committee, GTZ and the compliance scheme are developing a proposal to implement a collection and treatment scheme in a municipality (Escazu in most likelihood) in the beginning of 2008.</p> <p>But because of the delay in the decree, there was no further action up until the end of the project.</p>
1.8 To design and implement a registration and monitoring system for electronic equipment imported into Costa Rica.		<p>The Technical Committee invited the Ministry of Finance (Hacienda) and their customs direction to participate in the national committee or SINAGIRE</p> <p>Because of the delay in the decree, there was no further action up until the end of the project.</p>
1.9 To design and implement a financing and fee collection system for treatment services of WEEE.		<p>Because of the delay in the decree, there was no further action up until the end of the project, other than the shift to a concept of multiple compliance organisations. The expectation is still that the system will be based on an invisible fee at the point of purchase, and disposal will not be paid by the household or individual user. Businesses and institutions will pay a point of disposal fee.</p> <p>At the close of the project, this system is being implemented voluntarily by the group of producers and importers and their agents. The provisional fund (partially provided by the SDA funds, and financial commitment of the importers) is hosted by the Chamber of Industry, and will be supported (in the same amount) further by GTZ, which is treating the WEEE programme as a public-private partnership.</p>
1.10 To formalise and strengthen the channels of communication and exchange with Dutch institutions active in the management of WEEE.		<p>Despite the suggestion to use budget resources for exchange visits with North America, the project team decided to go ahead with organising a study visit to the Netherlands and the United Kingdom, in June 2007.</p> <p>WASTE re-contacted institutions mentioned above, and others, with the objective of information exchange, networking, etc. In this context, contacts were re-established with VROM, SenterNovem, Technical University of Delft. Furthermore, the study visit opened a door towards entering “StEP” (a United Nations led initiative to “Solve the E-waste Problem”, with member representatives from government, civil society and private sector). So, communication channels were established with non-Dutch stakeholders as well.</p>
	<b>Specific support actions by WASTE</b>	<p>The main activities of WASTE in this objective in the final year included:</p> <ol style="list-style-type: none"> <li>1. support to the study visit to the Netherlands, Belgium and the UK</li> <li>2. backstopping and discussions about closing the project</li> <li>3. support to the closing meeting</li> <li>4. a decision to join StEP, in order to make sure that the results and lessons learned from the project are disseminated more widely.</li> </ol>

## Specific Objective 2

To strengthen the entrepreneur initiatives in recovery and recycling of WEEE, as well as the reparation and re-use of electronic equipment and components; striving that the project benefits both enterprises constituted by male and female employees as well mixed enterprises.

The source of verification of the activities listed below for Objective no. 2 are presented in Annex 2, which includes the following.

1. Report of WASTE Training to ICE and ISECR
2. WASTE Training presentations on ICE (On CD-Rom)
3. Training for Storing centres
4. Information and visit to the dismantling companies Fortech and Servicios Ecologicos

### Expected results and Results at the Close of the Project

Actions	Expected results	Results at the Close of the Project
2.1-2.2 To identify entrepreneurs interested in installing and operating a de-assembly factory for WEEE equipment; through the preparation of technical selection criteria..	Technical selection criteria prepared for the de-assembly factory.	<p>Fortech and Servicios Ecologicos have emerged as key disassemblers in Costa Rica. Fortech was selected to process the materials from the October 20 collection at Price Smart. Within a short time they classified and organised the 60 tons, and are proceeding with manual disassembly. Regrettably, Fortech has not taken advantage of the technical research on disassembly made by the Instituto Tecnológico, and their approach to disassembly is, therefore, less efficient than it could be.</p> <p>Fortech has signed an business agreement with Canadian company “GEEP” and Servicios Ecologicos has signed with “Noranda”, also from Canada where it operates a precious metal s melter.</p> <p>The situation at the end of the project is that, because of the project, the capacity in Costa Rica and Central America to manage this material stream is greatly increased.</p>
2.3 To provide technical assistance to strengthen the actual waste collection and transportation system to incorporate the fraction of WEEE.	Plan in operation to strengthen the incorporation of the WEEE fraction in the actual waste collection and transportation system.	<p>This part of the project is no longer relevant, unless it relates to the MSE recycling centres, “centros de acopio,” which are discussed below. The reason for this is that in course of the project, it became clear that municipalities and the municipal waste system will probably not have the role that they have in the Netherlands, of being the main points for collection. Stationary recycling and waste depots in municipal hands, which characterise the Dutch system and form an important link in the Dutch WEEE system, simply do not exist in Costa Rica, so the technical assistance goes to the (micro and small) private sector instead.</p> <p>This means that the collection is largely outside of the waste collection and transportation systems, which is related to the fact that the municipalities have shown little interest in the system, and also don’t have much of a role in it. In the closing meeting, the lack of involvement of municipalities was identified as a weakness of the</p>

Actions	Expected results	Results at the Close of the Project
		<p>approach taken, but at the same time it is not clear what role the municipalities could have or might have wanted to play in the operation of the WEEE system. The meeting identified the need for more consultations with municipalities in order to see what synergies are possible in relation to organised collection, particularly in rural areas. Thus the preparation and operation of a plan to integrate the two streams becomes irrelevant, and has been dropped.</p>
<p>2.5 To design and implement an improvement plan for the infrastructure and operation of the in-take centres of WEEE equipment selected within the framework of the strategy.</p>	<p>Improvement needs identified.</p> <p>Improvement plan designed and implemented.</p>	<p>The plan to base collection on existing private MSE recycling centres remains the core of the planned system, but in the 2006 <i>diagnostico</i> it became clear that there are very few of them – in the metropolitan area especially – that have either the capacity or the infrastructure. The municipalities don't have this either, although outside of the metropolitan area, there is more potential for this.</p> <p>The experience with the pilot collections also suggests that special collection arrangements will be necessary for institutional and commercial generators, who are unlikely to use recycling centres. Non-household users have a much larger quantity of materials to dispose, and there is a higher likelihood that some parts of their systems will be suitable for reuse or refurbishing. But most of these 82% -- are located in the GAM Greater Metropolitan Area and so are in a position to deliver their materials to Fortech or Servicios Ecologicos. And in the 20 October collection, a number of them came from outside of the GAM.</p> <p>Training was given to storing centres and waste collection enterprises on different topics relate to the correct e-waste management.</p> <p>The NTC developed a checklist of the basic requirements for a storing centre for e-waste so it can be use for the compliance unit for the selection.</p> <p>Another approach to infrastructure is the involvement of the Government electric utility, ICE (Instituto Costarricense de Electricidad), in related collection operations. ICE has given the consultancy firm Industrial System Engineering Costa Rica (ISECR) the assignment to train ICE staff on Corporate Social Responsibility (CSR) aspects that are relevant for ICE's activities. As a utility, ICE is a large generator of WEEE materials, and as such they are part of their interests in CSR is to explore safe and responsible methods for dealing with the WEEE that they produce. This specific ICE initiative at first happened as an isolated event, without direct collaboration with the Technical Committee, even though a representative from ICE is a member of the NTC, and ICE participated in the first collection event. Later WASTE became involved in the process by giving a training to ISECR and ICE, and provided follow-up contacts with the Technical Committee. The commitment of ICE in the process in Costa Rica can be seen as very positive, as it is likely to contribute to commitment to the regional or national system.</p> <p>WASTE provided this training to ISECR and ICE on 17 July 2007 in Gouda, the Netherlands. It focused on three aspects: presenting the concept of Integrated Sustainable Waste Management (ISWM), the basics of WEEE Management, and the concept of Extended Producer Responsibility in relation to WEEE. Two representatives from ICE, and two managers from ISECR followed the training. A report of the training, with</p>

Actions	Expected results	Results at the Close of the Project
		<p>programme, is included in Annex 2.</p> <p>The situation at the close of the project is that the work with recycling centres or other collection points will continue with the support of GTZ. At the time of writing many but not all of the elements of the system are in place and have been tested, but their assembly into a functioning system waits the final approval of the decree.</p>
2.6 To design and implement a promotion and commercialization plan for components and recyclable materials of WEEE.	Promotion and commercialization plan designed and implemented.	<p>The idea to have a formal plan has shifted to creating and testing contacts in the marketplace, with a focus on North America including Mexico. The “producers group” has made formal agreements with WEEE treatment enterprises Canada.</p> <p>The ownership of the private sector is a more important result of the project than a formal plan.</p>
Overall Objective 2	<b>Specific Support Activities WASTE</b>	WASTE supported Objective 2 in a general way, and specifically with the training for ICE.

### ***Specific Objective 3***

To inform and sensitise the public (both male and female), so that they participate in accordance with their responsibility, in the process of implementation and consolidation of the National Strategy of Costa Rica for Integrated Sustainable Waste Management of WEEE, considering the perspective of gender.

The source of verification of the activities listed below for Objective no. 3 are presented in Annex 3 and include:

1. Poster presented at the ISWA Conference in Amsterdam, the Netherlands
2. WASTE brochure on the SDA II – WEEE project between Costa Rica and the Netherlands
3. Flyers to announce collection events
4. Newspaper Article (scanned copy) in ‘El Financiero’
5. Newspaper Articles for the collection event
6. E-waste Latin American Platform Project



### Expected results and Results at the Close of the Project

Actions	Expected results	Results at the Close of the Project
<p>3.1 To strengthen the National Technical Commission for WEEE in its role as intermediary and advisory entity between the private sector and the organisations for civil society.</p>	<p>National Technical Commission for WEEE strengthened; its strategic and action plan developed and implemented.</p>	<p>3.1 The Technical committee continues to co-ordinate the process and meet regularly. They plan to continue after the close of the current project.</p> <p>The focus of this activity has shifted to co-operative and knowledge exchange activities within Central America and other countries of South America and the Caribbean.</p> <p>The NTC was invited by the IDRC of Canada and Corporacion Sur of Chile to participate in the formulation of the Project “E-waste Latin American Platform”. Together with two specialists from the Swiss organisation Empa, the NTC prepared a project proposal to IDRC. IDRC approved the proposal for the next two years. Costa Rica, and the National Technical Committee will have a facilitating role for the rest of the countries in the Latin American region and the Caribbean.</p> <p>In the same way, ACEPESA presented a proposal to the Collaborative Working Group in Solid Waste Management in Low- and Middle-Income Countries (the CWG) to support initiatives in Panama and El Salvador. During the project, ACEPESA received demand from some institutions and companies from these countries to support them in the development of a similar process.</p>

Actions	Expected results	Results at the Close of the Project
<p>3.2-3.3 To design and implement an information and awareness raising programme to encourage re-use and repair of electronic equipment as well as adequate disposal of WEE, taking the gender aspect into consideration, and dissemination of the results of the first phase of the project</p>	<p>Information and awareness raising programme designed and implemented.</p> <p>Results of the first phase of the project disseminated.</p>	<p>There have been a number of campaigns of which the most recent focused on the collection event on 20 October. The Technical committee identified different moments for raising awareness, in relation to practical activities and creating a critical mass of understanding in the public. This has taken the place of a formal programme.</p> <p>The approach has two moments:</p> <ol style="list-style-type: none"> <li>1. to create a awareness of the problem and the health and environmental impacts of inadequate management of WEEE, through the mass media, radio, print media, and magazines of the Chambers of Industry and the American Chamber of Commerce (Amcham) and other members of the Technical Committee (see Annex 3 for press coverage, and for flyers used for announcing collection events)</li> <li>2. The second moment was and still is planned for launching the implementation of the system with a lead time of six to 10 weeks. Because of long delays, the awareness campaigns became linked to the collection events or other events like the closing meeting.</li> </ol> <p>All the members of the technical committee have participated as “ambassadors” of the programme, and this has been used for the Costa Rican press and media. Some examples include, attendance in Bolivia, Chile, Switzerland, ISWA conference in Amsterdam, CCAD (Central American Commission for Environment and Development) meeting in El Salvador, DHL Roadshow in London, England.</p> <p>Still another forum for awareness raising is participating in platforms, so that WASTE has joined the UN platform StEP, and the Technical Committee and ACEPESA are participating as founders of the Latin American Regional Platform for Recycling of WEEE.</p> <p>The mass media finds this an attractive topic and has given a lot of attention and free publicity.</p>
<p>Overall Objective 3</p>	<p>Specific Support Actions WASTE</p>	<ul style="list-style-type: none"> <li>◆ WASTE presented the project in a poster at the ISWA conference in Amsterdam at the end of September.</li> <li>◆ WASTE published a new brochure with the project described in it.</li> </ul>

### **Specific Objective 5**

To systematise and publish the methodology used for the formulation and implementation of the National Strategy in Costa Rica and disseminate this publication at national level in Costa Rica and amongst government institutions and relevant private and public sector institutions in Central America, Bhutan and Benin.

The sources for verification of this objective are in Annex 5 and include the following.

1. Systematization of the Methodology (English in hard copy; French and Spanish only on CD-Rom)

**Expected results and Results at the Close of the Project**

Actions	Expected results	Results at the Close of the Project
5.1 Systematisation of the methodology in English	Methodology used systematised in English	<p>Lilliana Abarca of WASTE has worked with Victoria Rudin and ACEPESA intern Caroline Riera to write the document. ISWM is the frame work for organising the document, which has been extensively reviewed by the Technical Committee.</p> <p>The document ‘Systematization of the Methodology’ is available in Spanish, English and French. See Annex 5 of this Final Report for the English hard-copy version. In addition, all versions will be included in Annex d digitally.</p>
Overall Objective 5	specific support activities at WASTE	<p>WASTE continued its participated in a series of discussions with the former Intermediate Technology Development Group (ITDG), now re-named Practical Action, and with WEDC about the production and publication of a book on E-waste. The systematisation of the methodology from the current project would form one or possibly two chapters in this book.</p> <p>WASTE is also working on translating the lessons into training modules targeting private, public, and NGO sector. There are possibilities to apply this in future activities of the Technical Committee, WASTE, and ACEPESA.</p>

## Activities Managed by WASTE and focusing on the Netherlands

This chapter describes the activities managed by WASTE in The Netherlands and Costa Rica during the second part of the Project. This relates primarily to activities falling under objectives 4 and 5, and includes activities by WASTE and ACEPESA.

### **Specific objective 4**

#### **Specific Objective 4**

To strengthen actions in the Netherlands that support lengthening useful life in the Netherlands, and the responsible refurbishment and selling within the Netherlands or for export of used electronic and electric equipment and components

Verification sources of these activities are in Annex 4 and include the following:

1. Paper “Promoting Reduction of WEEE by extending lifetime of workstations: a Case Study”
2. Paper “WEEE Dialogues”
3. Mission Report on workshop Forum for the Future, 11 October 2007, in London.
4. Workshop Report “Emerging responsibilities: Managing environmental impacts of end-of-life mobiles in developing countries, including presentations Workshop Forum for the Future (CD-Rom only)

### **Expected results and Results at the Close of the Project**

While there are no further activities to report in 2007, the lessons learned have been incorporated in a project that WASTE is doing with ENDA, and also are closely integrated into some of the activities of the Regional Platform mentioned above.

<b>Actions</b>	<b>Expected Results</b>	<b>Results at the Close of the Project</b>
4.1 To develop and organise discussions, and if necessary dissemination and awareness-raising actions, with municipalities in the Netherlands to promote actions and materials that extend	Dissemination and awareness-raising campaign and/or public actions implemented. Identification of two municipalities who want to work more intensively on this topic together with their sister cities, Organisation of a discussion with these municipalities and sister cities on priorities.	Aside from finalising the paper, no further activities were undertaken (see half-year Narrative Report on this project July – December 2006, paragraph 3.1.2)

Actions	Expected Results	Results at the Close of the Project
the useful life of electronic equipment, and, when it can no longer be used for its original purpose, support further reuse refurbishment, and other strategies, including responsible export	A “white paper” on responsible export from the point of view of the municipalities in the Netherlands is produced and disseminated.	
4.2 To co-operate with municipalities and the Association of Dutch Municipalities in the Netherlands (VNG) to document their experiences with the relationship between the use of “open source” computer programmes in municipalities with the length of life of electronic equipment.	A white paper is produced on the potential relationship between the use of open source software and the length of life of WEEE in the Netherlands, based on existing research, or, in case of a lack of such research, the paper will offer a review of the literature and a research design.	The desk and field research done in 2006 on the relationship between the length of life and the use of open source software have resulted in the (edited) white paper “Promoting Reduction of WEEE by extending lifetime of workstations: a Case Study” (see Annex 4 for the hard-copy of this report).
4.3 To invite participation of key WASTE partners in the South to join the discourse on sustainable or responsible export of used electronic equipment, in the light of ongoing debates about computer literacy, connectivity, and related issues.	Partner organisations in India, Eastern Europe, Philippines, West and East Africa and Latin America are invited to join an email discussion. A “white paper” on responsible export from the point of view of Southern recycling and other stakeholders is produced and disseminated.	The desk and field research done in 2006 have resulted in finalizing the paper “The WEEE Dialogues”. A hard-copy is included in Annex 4.

Actions	Expected Results	Results at the Close of the Project
<p>4.4 Facilitation of a discussion on responsible export in co-operation with key Dutch stakeholders, including the incorporation of concepts of repair, reuse and refurbishment in the discussion.</p>	<p>A public debate is organised between and among key Dutch stakeholders on the role of export in responsible end-of-life management of WEEE after its original owner is finished with it. A summary of the debate is published and disseminated. Dutch and European media is invited to the public debate and reports on it.</p>	<p>Although WASTE did not organise activities to this specific result (see half-year Narrative Report on this project July – December 2006, paragraph 3.1.2), WASTE has been involved in the following activities that contribute to this result.</p> <p>Forum for the Future, a British NGO, invited WASTE to participate in a one-day workshop entitled “Emerging responsibilities: Managing environmental impacts of end-of-life mobiles in developing countries” in London, on 11 October 2007. The objective of this workshop was to discuss strategies for dealing with WEEE in Africa specifically, and to come to a starting point of formulating concrete projects by a variety of stakeholders (private sector, government, NGO – civil society). Annex 4 includes a report of this workshop, written by WASTE, and a report written by Forum for the Future.</p>

## **Project results, lessons learnt and follow-up**

This is the final narrative report of the Bilateral Project “Implementation and strengthening of systems that guarantee a responsible management of waste from electronic and electric equipment, in Costa Rica and The Netherlands”. This chapter provides a brief reflection on the entire project. The chapter is divided according to the main results, the main lessons learned, and the proposed follow-up activities in the area. For more detailed analysis of the project and the previous project, please refer to the document ‘Systematisation of the Methodology’ which is available in hardcopy in Annex 5 (in English) and on CD-Rom (English, Spanish, French).

### ***Main project results***

The main project results of the two projects are the experience of using multi-stakeholder approaches for a (supposedly) highly technical area like WEEE, and the resulting developments in Costa Rica. The dependency of the project on political processes outside its direct control has meant that there is not a clear result in terms of a legal system, but this does not detract from the project’s real accomplishments: mobilisation of public and private sector, involvement of a broad variety of actors, and the reaching of a broad social consensus on how to manage WEEE in Costa Rica in the future.

### ***Main Lessons Learnt***

1. A new and complex process such as environmentally safe management for electronic waste requires the participation and establishment of alliances among the different stakeholders in society.
2. A primary stakeholder that should be part of the process from the beginning is the producer/importer.
3. Setting up a coordinator group should be done by precisely identifying the major influential stakeholders.
4. In order to achieve a process of developing a (national) system for the management of electronic waste, it is important to create an entity that facilitates the process. It is important that this entity has recognition at national level, and has the ability to mobilise stakeholders, for which alliances with strategic partners might have to be created.
5. When the process is led by an independent and neutral organisation it creates the advantage of being able to facilitate and enable interdisciplinary and inter-institutional interchange within an environment of respect. On the hand, being independent and neutral probably means that the power and ability to enforce decisions to be taken at political level is limited. In the case of Costa Rica, both the coordinating group and the National Technical Committee had limited influence on process of approval of the legal instruments essential for the implementation of the system.
6. The interdisciplinary and inter-institutional work done by the coordinating group makes it possible to diversify ideas and knowledge; and brings about a more accurate approach to reality.
7. The Study Visit, in 2003, to the Netherlands (part of the first project) contributed to strengthening the participation of the coordinating group members, facilitating sensitization and motivation processes to deal with the subject matter, but it also made it possible to establish interpersonal relationships within the group, which affected their commitment.

8. A lack of knowledge about the subject limits the capacity to place a priority on intervention areas in the project design. This had an effect such that ongoing modifications had to be made to the line items in the budget, caused by a project so complex that it tried to cover too many areas without doing any analysis about the real capacity underlying what is planned.
9. Local resource management is key to the project's financial sustainability.
10. Local management of the funds of the project allows the adjustment of budget line allocations according to the needs as they arise during the execution of the project, especially when the project activities are process-related and subject and sensitive to political "conjuntura" beyond the control of the implementing agency. It is important to recognize that the financing agency allowed this flexibility in the execution of the project.
11. The concept of Extended Producer Responsibility is complex and has other additional aspects in comparison to the more common *ordinary* solid waste stream, which traditionally is managed by the local government and in which the private productive sector has little incidence. With waste streams of products related to EPR, to the contrary, the role of the initial producer of the product is crucial.
12. Once the subject was placed on the national agenda, it began to generate a demand for environmentally safe treatment of electronic waste.
13. The participation by business chambers facilitated the commitment of some associated companies. Nevertheless, approval of the bylaws will force all the electronic equipment import companies to assume their responsibility.
14. It is important to define, who is the main target group of the EPR system to be implemented, and consequently identify those who are the originators of the product (electronic equipment in this case). In the case of Costa Rica, the chain of production focussed in the end on the importers.
15. The bylaws being approved is fundamental to creating initiatives that minimize the impact of electronic waste.
16. The legal component constitutes the pivotal issue for developing the project initiatives because it is based on extended producer responsibility. However, the steps required in the process, the political wavering and partisan interests condition and limit the project actions. This means that special attention has to be given to maintaining the momentum of the process, keeping the involved actors interested in the (outcome) of the process, and identifying those activities which can be done independently of the approval of the legal instrument.
17. Since the competencies and functions of the state institutions involved in the subject are not clear, it causes delays in implementing the project.
18. Political support is needed to consolidate a process of this nature, both at the initial and complementing stages of the process.

In addition to the specific lessons learned about the process in Costa Rica, a few other lessons can be formulated from the nature of the bilateral co-operation:

19. There is a lot to be done before bilateral projects can operate in a truly horizontal way. The Dutch-focused elements of the project, concentrated in Activity 4, were weakened by the lack of commitment of Dutch institutions to the process in particular, and to mutually critical bilateral processes in general. This lack of willingness to commit was also the source of the Dutch withdrawal from the Sustainable Development Agreements.
20. As is the case of the relationships within the National Technical Committee in Costa Rica, the longer-term institutional relationships between WASTE and ACEPESA



and the personal commitments involved in them had a great deal to do with the accomplishments that the project can claim.

21. In the highly politicised international discourse on management of e-waste, the involvement of two relatively neutral organisations like WASTE and ACEPESA has both advantages and disadvantages. On the one hand, it allowed both organisations to explore neutral institutional space and facilitate processes where progress was made towards a “third way”. On the other hand, without status as “players,” it was difficult to engage the more powerful stakeholders. ACEPESA achieved this to a greater extent than WASTE, in part because the project focused on practical action in Costa Rica, and this interested international actors like INTEL. The activities of WASTE in the Netherlands had less ability to attract attention, because they were more symbolic than practical.

## ***Follow-Up Activities***

### **ACEPESA follow-up**

ACEPESA and the Technical Committee will continue the project in the following ways.

1. Continuing implementation in Costa Rica

With the commitment of GTZ to continue the project in the framework of its PPP programme, the process in Costa Rica will receive support to move to the implementation phase. GTZ sees the foundation laid by the Technical Committee as the basis for a strong collaboration between the private sector producers and private recycling sector, the ministries of health and environment, and civil society.

2. Participation as a founding member in the Regional Platform on WEEE and Computers in Latin America and the Caribbean (“the Regional Platform”).

Co-operation with SUR and the project on E-waste financed by IDRC in Canada continues in the form of the Regional Platform, in which ACEPESA, representing the Technical Committee, is a founding member. This provides one channel for replicating the results, and exchanging and enriching the experience in other countries in Latin America and the Caribbean.

3. Replicating the process in El Salvador, Panama, and Nicaragua

The Closing Workshop was the occasion for exchanging experiences and ambitions with counterparts in Panama, El Salvador, Nicaragua, Honduras, and Guatemala, as well as for broad Costa Rican stakeholder participation in determining next steps in Costa Rica. ACEPESA has secured co-financing for the first stage, a national assessment, in Panama, El Salvador, and Nicaragua. The CWG (collaborative working group on solid waste management in low- and middle-income countries) is co-financing the “diagnostico” in Panama and El Salvador, and the Regional Platform is co-financing the same process in Nicaragua and possibly in Guatemala.

### **WASTE follow-up**

Throughout the project, WASTE has become more knowledgeable on the issue of management of Waste from Electronic and Electric Equipment, and specifically on how to strengthen national capacity initiatives that aim at resolving WEEE management issues in a more sustainable way. In addition, WASTE has become more knowledgeable in the relation to the illegal export from high- to low-income countries, and has established good contacts with key-stakeholders in the international WEEE management discourse.

WASTE will continue to look for opportunities to work on projects that aim at the issue of WEEE.

Some concrete follow-up action include:

1. WASTE is communicating actively on becoming an active member of the 'Solving the E-waste Problem' (StEP) initiative. WASTE has the ambition to take a leading role in the Task Force 'Capacity Building / Knowledge' within this international, multi-stakeholder, consortium.
2. Enda Europe and WASTE have been awarded a tender from the European Union to implement a project related to WEEE: the 'digital divide and the digital dump'. This project focuses predominantly on raising awareness on WEEE related issues among EU consumers and initiatives that export 2<sup>nd</sup> countries. This provides an opportunity to replicate some of the approaches in Objective 4 in the Netherlands and France, and to introduce some aspects of the process in Senegal.
3. Through its collaboration in the multi-year PPP-ISWM programme with UNDP-PPPSD (Public-Private Partnerships for Service Delivery), WASTE will have the opportunity to turn the Costa Rican experience into training materials. Within this programme is also a potential to finance similar initiatives elsewhere.
4. WASTE will continue to actively disseminate the document Systematisation of the Methodology and other knowledge products. For instance, WASTE will present a poster of the project on the International Conference on Technologies for Waste and Wastewater Treatment, Remediation of contaminated Sites and Emissions Related to Climate, or Kalmar Eco-Tech 07 to take place in Sweden at the end of November 2007.

# **Financial Report for the Period January – October 2007**

## ***Brief overview of expenditures for the period***

Based on permission from KIT, both WASTE and ACEPESA used funds as needed to close the project. All funds from Objective 4 were transferred in the Annual Plan 2007 to other lines. The majority of the expenditures were in Objectives 1, 3 and 5, and supported the following activities:

1. The Study Visit for the Technical Committee to the Netherlands, Belgium and England;
2. Organising, operating, and managing materials from the October 20 collection event at Price-Market;
3. The closing meeting in Costa Rica;
4. The systematisation of the methodology;
5. Participation of the Technical Committee in international events.

Other expenditures include activities related to the closing of the project.

## ***Notes on the Financial Reports 2007***

As agreed between KIT, WASTE and ACEPESA did not prepare a financial report for the period January – June as was the case in previous reporting. This financial report covers the period January – October 2007 for both WASTE and ACEPESA.

The own contribution is for the entire period January – October 2007, for WASTE, the own contribution is constituted by:

- ◆ Contribution in time of staff, documented in the WASTE time writing sheets;
- ◆ Contribution through the differences in tariffs for senior consultants between this project and standard WASTE projects.

For ACEPESA, the own contribution consists of non-personnel costs and time spent by staff.

As the project will be closed on 31 October, there will be no annual plan included in this report.

Although the budget specifies a line for “Audit & Evaluation”, there will be no external evaluation of this project. This was agreed in a telephone conversation between WASTE and KIT, and has later been confirmed by KIT in an email. KIT gave permission to WASTE to use the budget that was initially budgeted for evaluation to cover WASTE hour costs, on the condition that other project budget lines are fully depleted.

The results of the financial audits are included as annexes.

## ***Financial Report January - October 2007***

**WASTE & ACEPESA, 15 pages**

## **Annexes**

### ***Annex 1, Annexes to Objective 1***

1. Final proposal of National Decree for e-waste management
2. Cost Benefit analysis of the National Decree
3. Schematic drawing of the proposed scheme
4. Report of the Study Visit to the Netherlands, Belgium and London (prepared by Technical Committee)
5. Report of the Study Visit to the Netherlands, Belgium and London (prepared by WASTE)
6. Report of the Study Visit to Canada
7. Presentation of Eugenio Androvetto of the Ministry of Health in the AIDIS (Asociación Interamericana de Ingeniería Sanitaria y Ambiental)
8. Latin American Conference in Chile
9. Presentation of Maritza Marin of ACEPESA in the III Expoambiente Mesoamericana (Central American Environmental Fair) organise and funded by the CCAD (Central American Commission for Environment and Development)
10. Report of the workshop with the electronic importers – October 2007
11. Report of the meetings for the conformation of the Compliance Unit
12. Report of the Collection Event on 20 October 2007
13. Report of attendance at the Regional Event in Bolivia, 23-26 October 2007
14. Letter of commitment of the Director of the CYMA Programme – GTZ to continue the follow up and support to the WEEE Project
15. Report of the Closing Meeting, 29-30 October, 2007, San José, Costa Rica

### ***Annex 2, Annexes to Objective 2***

1. Training for Storing centres
2. Information and visit to the dismantling companies Fortech and Servicios Ecologicos
3. Report of WASTE Training to ICE and ISECR
4. WASTE Training presentations on ICE (On CD-Rom)

### ***Annex 3, Annexes to Objective 3***

1. Poster presented at the ISWA Conference in Amsterdam, the Netherlands
2. WASTE brochure on the SDA II – WEEE project between Costa Rica and the Netherlands
3. Flyers to announce collection events
4. Newspaper Article (scanned copy) in ‘El Financiero’
5. Newspaper Articles for the collection event
6. E-waste Latin American Platform Project

### ***Annex 4, Annexes to Objective 4***

1. Paper “Promoting Reduction of WEEE by extending lifetime of workstations: a Case Study”
2. Paper “WEEE Dialogues”
3. Mission Report on workshop Forum for the Future, 11 October 2007, in London.

4. Workshop Report “Emerging responsibilities: Managing environmental impacts of end-of-life mobiles in developing countries, including presentations Workshop Forum for the Future (CD-Rom only)

### ***Annex 5, Annexes to Objective 5***

1. Systematization of the Methodology (English in hard copy; French and Spanish only on CD-Rom)



## **Anexo 5**

## **Anexo 6**