



ed**TOOL**

ecodesign tool

Taller de Ecodiseño (TF-11). Madrid, 29 de Noviembre de 2016

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Inèdit: Misión y valores



Se constituye con la misión de reforzar la competitividad de sus clientes mediante la incorporación de la sostenibilidad como un elemento diferenciador.

- Compromiso ambiental por convencimiento empresarial
- Empatía e implicación para reforzar la actividad de nuestros clientes.
- Investigación e innovación continua dar respuesta a las necesidades de nuestros clientes.
- Recursos humanos de alto nivel capaces de trabajar en equipos transdisciplinares.



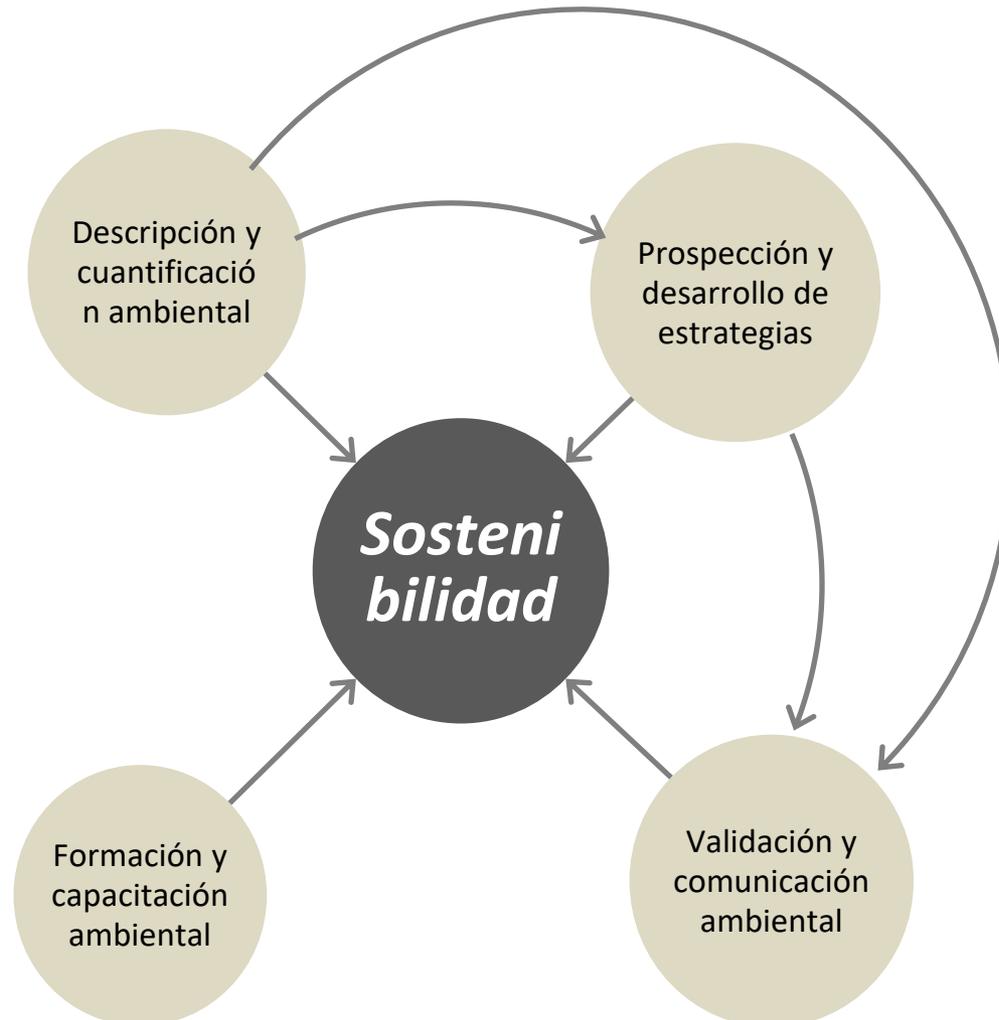
Inèdit: historia



- (1) **inèdit**, nacida en el 2009, surge y forma parte del grupo de investigación consolidado **Sostenipra**, que también agrupa investigadores de el **ICTA - UAB** y del **IRTA**, centros de referencia internacional en sus respectivos ámbitos.
- (2) La apuesta de innovación de inèdit esta apoyada por el **Parque de Investigación de la Universitat Autònoma de Barcelona** (PRUAB), del cual es miembro.
- (3) Desde 2010 inèdit participa, en calidad de socia fundadora y accionista, en la empresa **Vertical Farming** (agricultura urbana sostenible).
- (4) En 2011 se creo **inèdit méxico** (servicios de arquitectura sostenible y turismo).

INTEGRAR VECTOR AMBIENTAL

Caminos para la sostenibilidad (según visión de inèdit)





CONTENIDOS:

1 – ECODISEÑO

2 – ASPECTOS GENERALES Y CONSIDERACIONES PREVIAS

3 – DEFINICIÓN INICIAL

4 – AVALUACIÓN AMBIENTAL

5 – ESTRATEGIAS

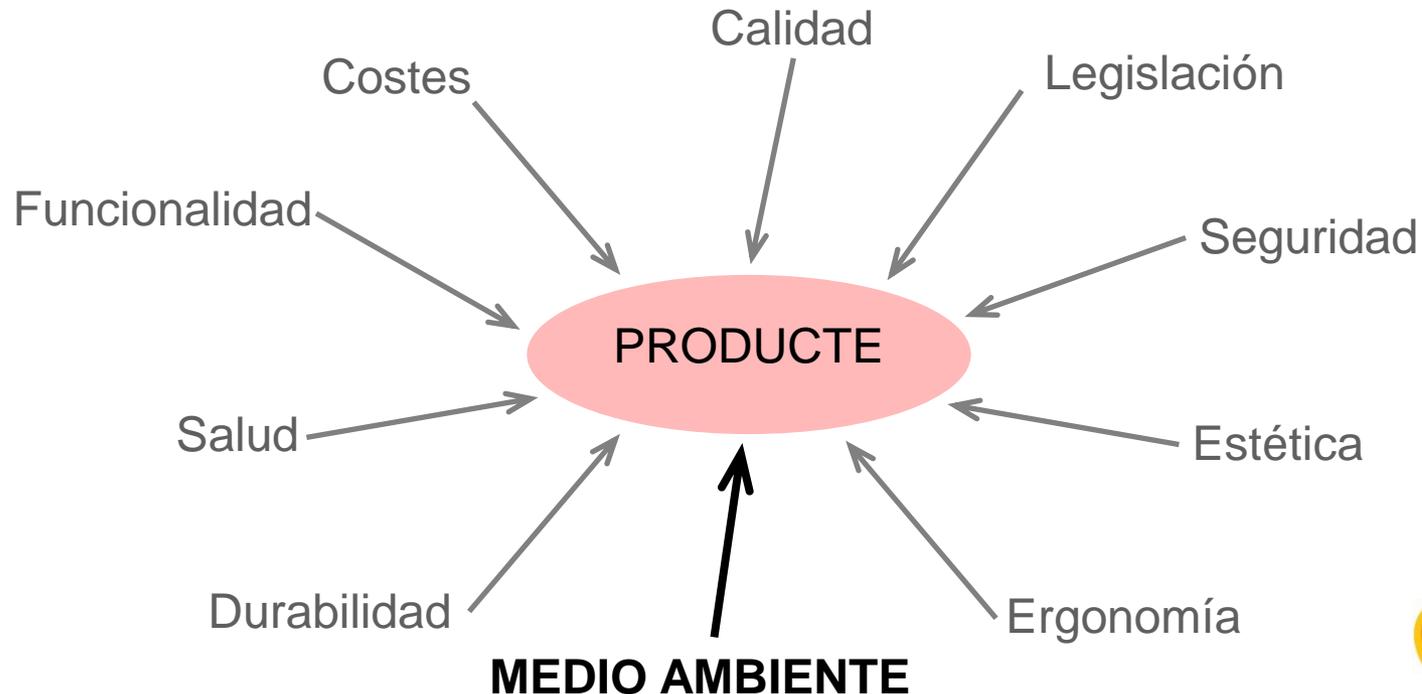
6 – INFORMES





1-ECODISEÑO

... desarrollo y diseño de productos y servicios teniendo en cuenta los aspectos e impactos ambientales asociados a su ciclo de vida, con el objetivo de minimizarlos.





1-ECODISEÑO

Visión de ciclo de vida





1-ECODISEÑO

Aspectos clave





1-ECODISEÑO

Estrategias de ecodiseño

El objetivo es la **reducción de los impactos ambientales** que se producen a lo **largo del ciclo de vida** del producto:

- Introducción de mejoras conceptuales
- Selección de materiales de bajo impacto ambiental.
- Tecnologías de fabricación más eficientes.
- Optimización del transporte y embalaje
- Mejoras funcionales.
- Reducción de residuos y mejora de sus gestión final.



1-ECODISEÑO

Generación de impactos ambientales

Los productos no existen de manera aislada, sino que su funcionamiento requiere de otros productos y servicios:

- sistemas de transporte
- energía
- envases
- recambios y accesorios
- etc.

Nuevo concepto: **PRODUCTO - SISTEMA**



1 – EL ECODISEÑO

HERRAMIENTA PARA EL ECODISEÑO



ed**TOOL** 
ecodesign tool



Projet cofinancé par le Fonds Européen de Développement Régional (FEDER)

Project cofinanced by the European Regional Development Fund (ERDF)



<http://edtool.sostenipra.cat>



@carlesgasol | @ineditinnova | #edtool | www.ineditinnova.com



2 – ASPECTOS GENERALES

OBJETIVO DE LA HERRAMIENTA

edTOOL pretende mejorar la sostenibilidad de productos y servicios mediante la implementación del ecodiseño en las empresas, paso a paso y de manera intuitiva.





2 – ASPECTOS GENERALES

CARACTERÍSTICAS:

- Útil para guiar a las empresas en el proceso de ecodiseño (especialmente en las etapas iniciales)
- Flexible e intuitiva
- Propositiva, con recomendaciones para la mejora ambiental
- Práctica, con ejemplos reales de aplicación

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ecodesign tool



2 – ASPECTOS GENERALES

Guía del Usuario





2 – ASPECTOS GENERALES

Guía de usuario

Proporcionar descripciones detalladas y aclaraciones sobre cómo utilizar la herramienta.

Además, presenta **tres casos prácticos**: un cuchillo, una caja de madera de vinos para botellas de vino y una chaqueta.



ARCOS



 **FINSA**
Asociación de Madrid



ECOALF



Disponible on-line en:

<http://edtool.sostenipra.cat>

 Login

edTOOL

ecodesign tool

edTOOL is a practical and propositve ecodesign web-based tool for the improvement of the sustainability of products and services.

Authors



inèdit
innovation for
sustainability



icta



Institute of Environmental
Science and Technology -UAB



UAB
Universitat Autònoma de Barcelona



sostenipra

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Financial Support



Project cofinanced by the Fondo Europeo de Desarrollo Regional (FEDER)
Project cofinanced by the European Regional Development Fund (ERDF)

[Click here to view ECO-SCP-MED partners and collaborators](#)

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2 – ASPECTOS GENERALES

Disponible on-line en:

<http://edtool.sostenipra.cat>

Usuario demo: edtool@ineditinnova.com

Password: edtool

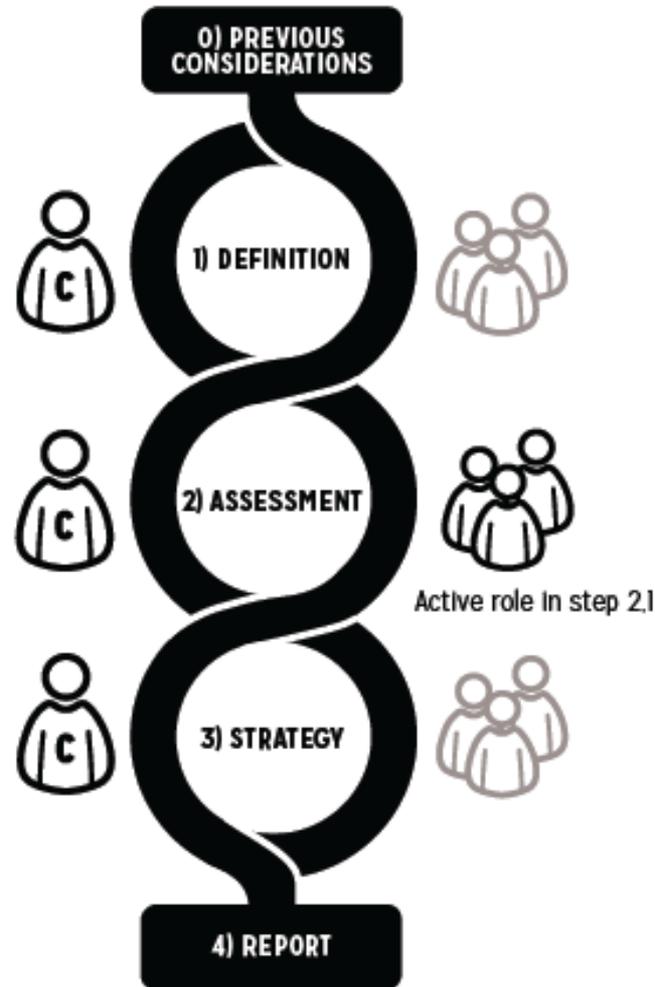
Se puede navegar y consultar los **casos prácticos**





2 – ASPECTOS GENERALES

ESTRUCTURA (metodología)





2 – ASPECTOS GENERALES

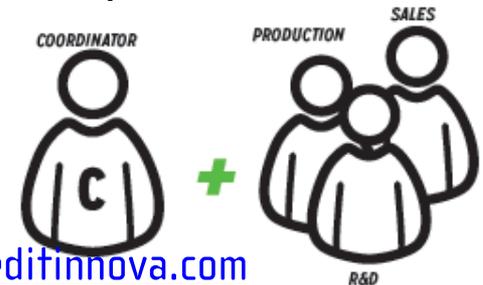
CONSIDERACIONES PREVIAS

La herramienta puede ser utilizada para el ecodiseño de productos y servicios, aunque su implementación es más directa en el caso del ecodiseño de productos.

El tiempo necesario para aplicar la herramienta dependerá de cada proyecto (orientativamente: de uno a cinco meses).

edTOOL considera dos tipos de usuarios:

- **Coordinador de proyecto** (*responsabilidad en el uso general de la herramienta*)
- **Miembros del equipo** (*serán invitados por el coordinador, podrán acceder a todo pero con permisos de edición limitados*).



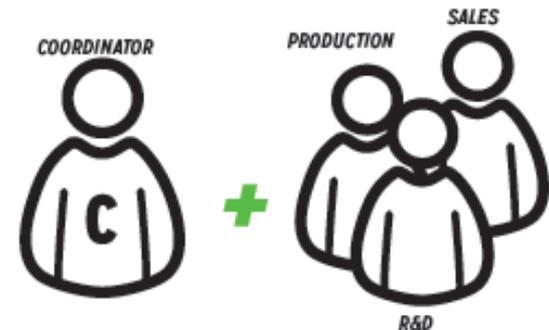


2 – ASPECTOS GENERALES

CONSIDERACIONES PREVIAS

Aunque el coordinador es responsable de gestionar la herramienta, el trabajo a desarrollar corresponde a todo el equipo de ecodiseño.

La guía de usuario proporciona indicaciones sobre cómo implementar el proceso a la empresa (reuniones a ejecutar, plazos de tiempo recomendados, etc ...).





2 – ASPECTOS GENERALES

PRIMER PASO

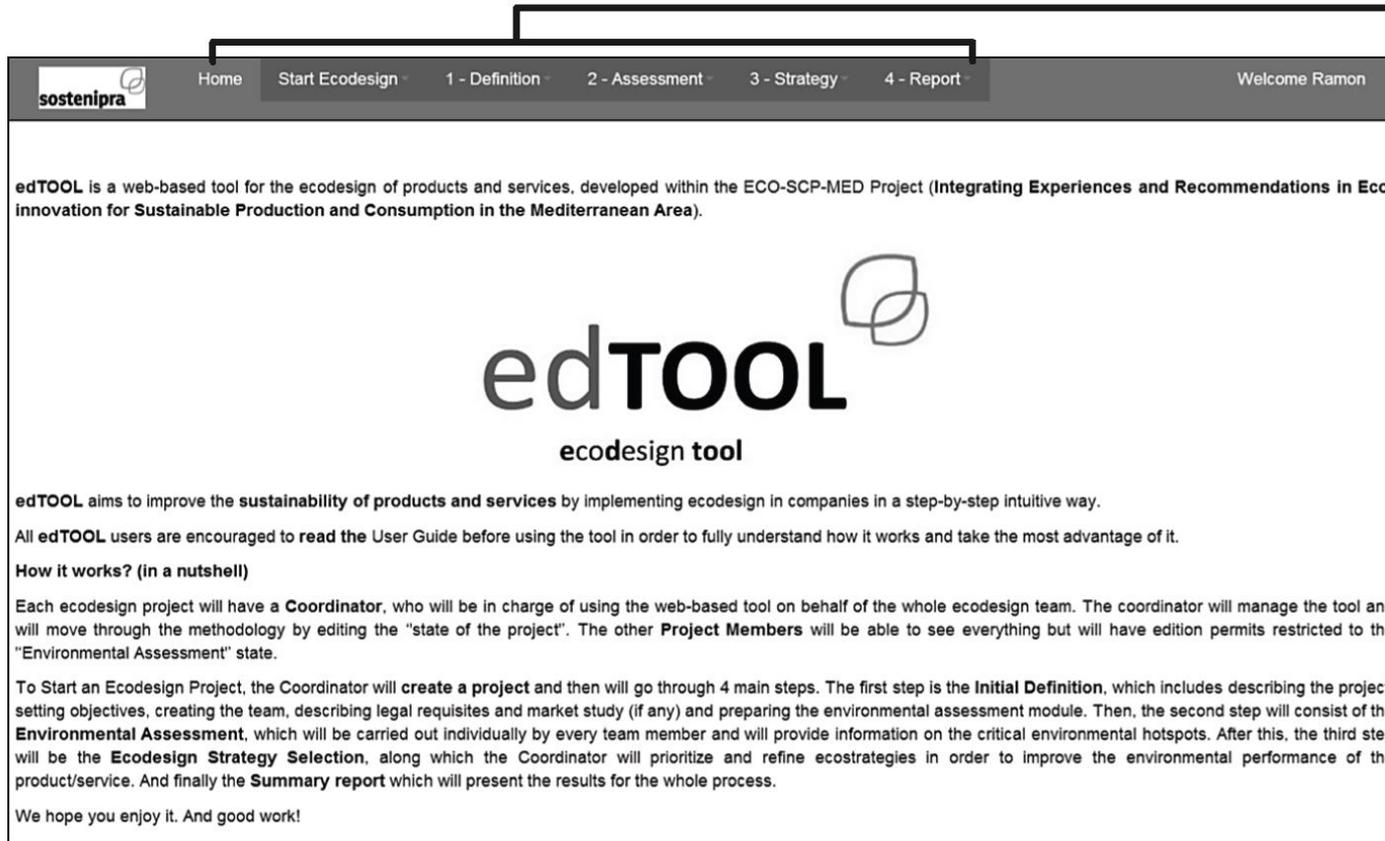
Registre on-line (gratuita)





2 – ASPECTOS GENERALES

PÁGINA DE INICIO



sostenipra Home Start Ecodesign 1 - Definition 2 - Assessment 3 - Strategy 4 - Report Welcome Ramon

edTOOL is a web-based tool for the ecodesign of products and services, developed within the ECO-SCP-MED Project (Integrating Experiences and Recommendations in Eco-innovation for Sustainable Production and Consumption in the Mediterranean Area).

edTOOL
ecodesign tool

edTOOL aims to improve the sustainability of products and services by implementing ecodesign in companies in a step-by-step intuitive way.

All edTOOL users are encouraged to read the User Guide before using the tool in order to fully understand how it works and take the most advantage of it.

How it works? (in a nutshell)

Each ecodesign project will have a **Coordinator**, who will be in charge of using the web-based tool on behalf of the whole ecodesign team. The coordinator will manage the tool and will move through the methodology by editing the "state of the project". The other **Project Members** will be able to see everything but will have edition permits restricted to the "Environmental Assessment" state.

To Start an Ecodesign Project, the Coordinator will create a project and then will go through 4 main steps. The first step is the **Initial Definition**, which includes describing the project, setting objectives, creating the team, describing legal requisites and market study (if any) and preparing the environmental assessment module. Then, the second step will consist of the **Environmental Assessment**, which will be carried out individually by every team member and will provide information on the critical environmental hotspots. After this, the third step will be the **Ecodesign Strategy Selection**, along which the Coordinator will prioritize and refine ecostrategies in order to improve the environmental performance of the product/service. And finally the **Summary report** which will present the results for the whole process.

We hope you enjoy it. And good work!

0) PREVIOUS CONSIDERATIONS

1) DEFINITION

2) ASSESSMENT

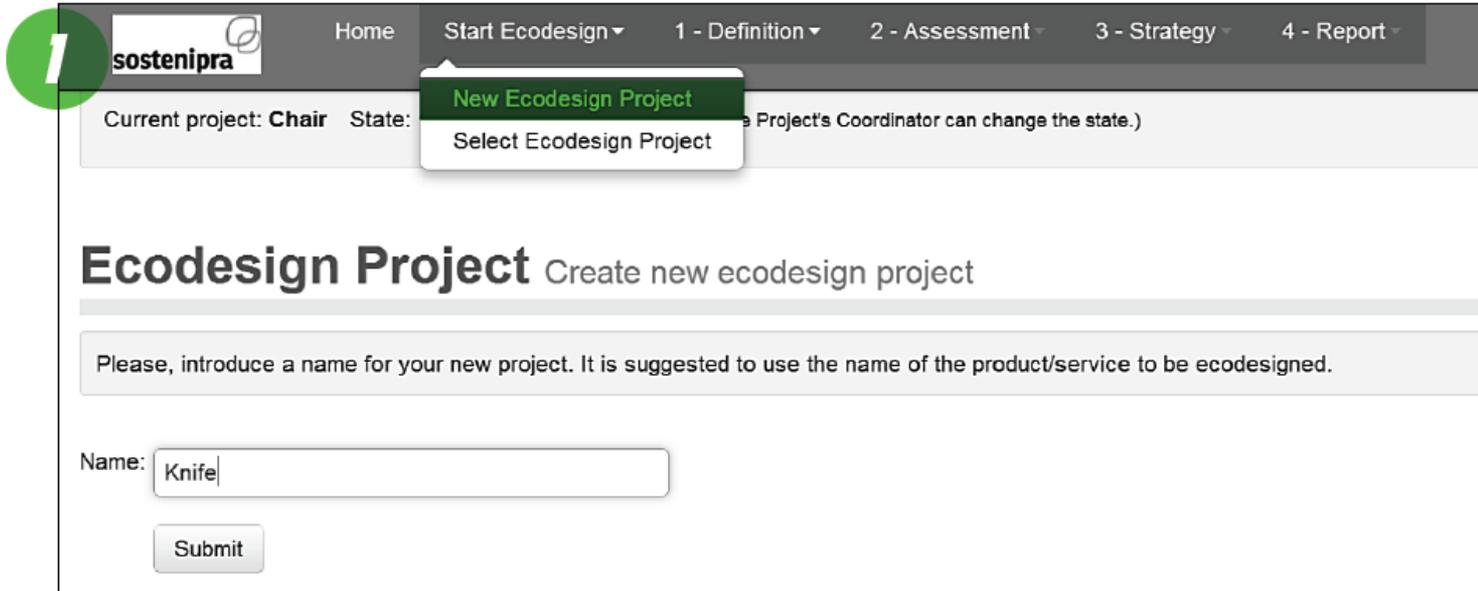
3) STRATEGY

4) REPORT





EMPEZAR UN PROYECTO NUEVO



1  Home Start Ecodesign ▾ 1 - Definition ▾ 2 - Assessment ▾ 3 - Strategy ▾ 4 - Report ▾

Current project: **Chair** State: **1 - Initial definition** (Project's Coordinator can change the state.)

New Ecodesign Project
Select Ecodesign Project

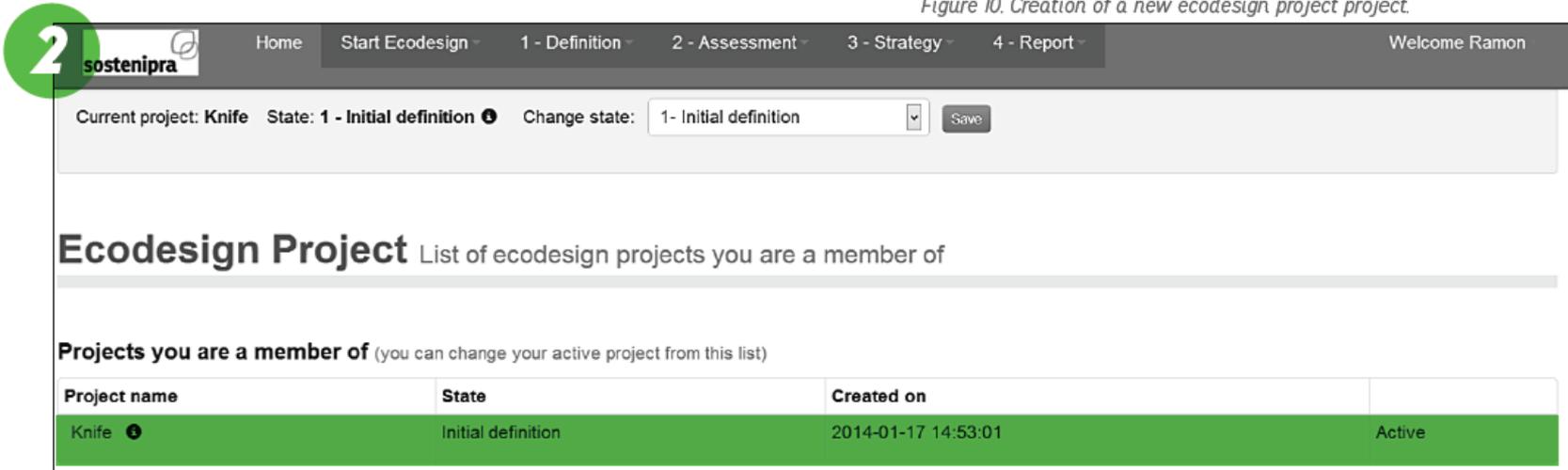
Ecodesign Project

 Create new ecodesign project

Please, introduce a name for your new project. It is suggested to use the name of the product/service to be ecodesigned.

Name:

Figure 10. Creation of a new ecodesign project project.



2  Home Start Ecodesign ▾ 1 - Definition ▾ 2 - Assessment ▾ 3 - Strategy ▾ 4 - Report ▾ Welcome Ramon

Current project: **Knife** State: **1 - Initial definition** Change state:

Ecodesign Project

 List of ecodesign projects you are a member of

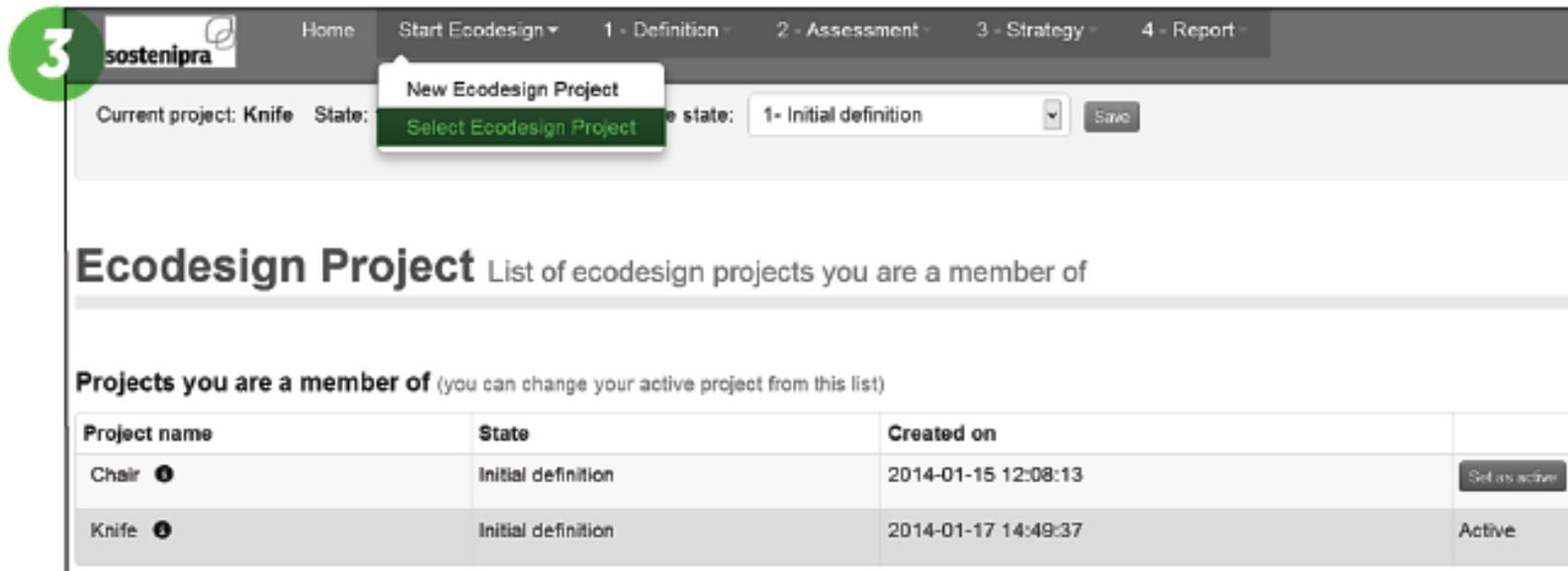
Projects you are a member of (you can change your active project from this list)

Project name	State	Created on	
Knife 	Initial definition	2014-01-17 14:53:01	Active



2 – ASPECTOS GENERALES

Si ya tienes un proyecto...



The screenshot shows the 'sostenipra' web application interface. A green circle with the number '3' is overlaid on the top left. The navigation bar includes 'Home', 'Start Ecodesign', and a progress indicator with steps: '1 - Definition', '2 - Assessment', '3 - Strategy', and '4 - Report'. A dropdown menu for 'Start Ecodesign' is open, showing 'New Ecodesign Project' and 'Select Ecodesign Project'. Below the navigation bar, the current project is 'Knife' and the state is '1- Initial definition'. A 'Save' button is visible. The main content area is titled 'Ecodesign Project' and contains a list of projects the user is a member of. The table below shows two projects: 'Chair' and 'Knife', both in 'Initial definition' state, with their creation dates and a 'Set as active' button for each.

Project name	State	Created on	
Chair ⓘ	Initial definition	2014-01-15 12:08:13	Set as active
Knife ⓘ	Initial definition	2014-01-17 14:49:37	Active



2 – ASPECTOS GENERALES

Importante!

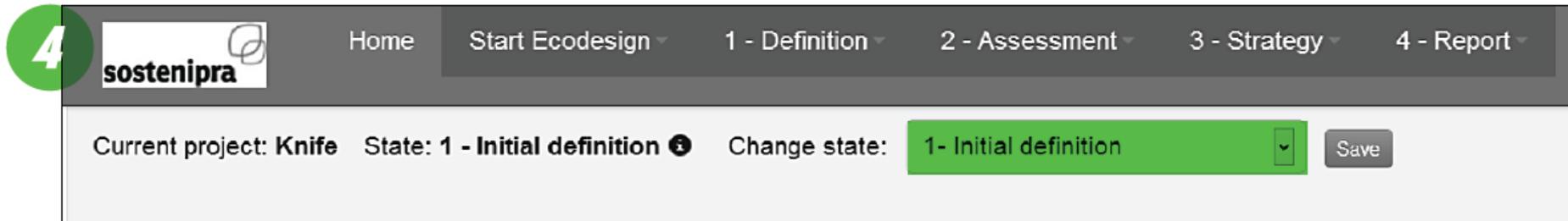
edTOOL se basa en 4 '**estados**' diferentes que son controlados por el coordinador:

(1) **Definición inicial** (*Initial Definition*)

(2) **Avaluación ambiental** (*Environmental Assessment*)

(3) **Selección de estrategias** (*Strategy selection*)

(4) **Informes** (*Summary Report*).



The screenshot shows the edTOOL interface. On the left, there is a green circle with the number '4' and the 'sostenipra' logo. The main navigation bar includes 'Home', 'Start Ecodesign', and four state options: '1 - Definition', '2 - Assessment', '3 - Strategy', and '4 - Report'. Below this, the current project is 'Knife' and the state is '1 - Initial definition'. A 'Change state:' dropdown menu is open, showing '1 - Initial definition' selected. A 'Save' button is visible to the right of the dropdown.



2 – ASPECTOS GENERALES

Caso de estudio: cuchillo

Este caso de estudio, financiado gracias al proyecto piloto de ecodiseño ENISA, se utiliza como ejemplo de aplicación de la herramienta edTOOL.

Cuchillo serie 900





3 – DEFINICIÓN INICIAL



PASO 1. Definición inicial

Este paso sirve al Coordinador para definir:

- El equipo,
- El producto a evaluar,
- Los requisitos legales que afectan el producto,
- El mercado, y
- Los criterios para la evaluación ambiental (Paso 2).



*Coordinates meeting
Fills the application*



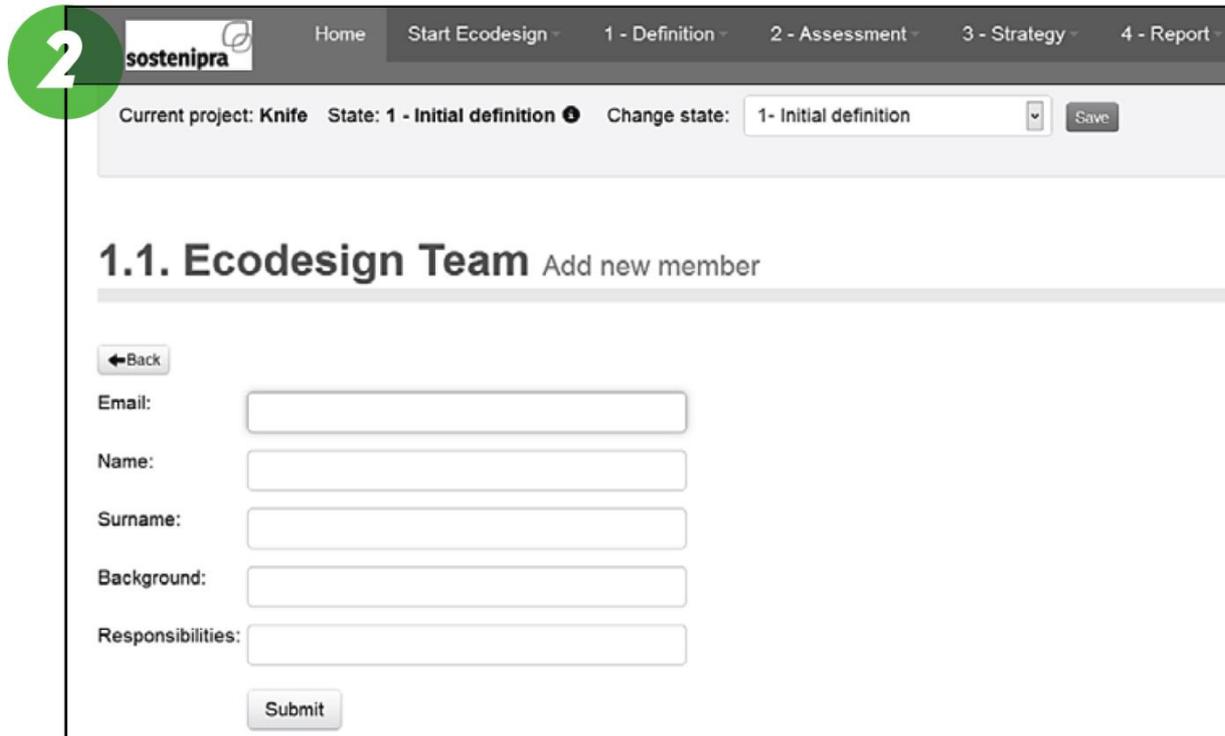
*Contribute
Offer feedback*



3 – DEFINICIÓN INICIAL

EQUIPO DE TRABAJO

- Multidisciplinario (dirección, técnicos, ingenieros, marketing, gestores...).
- En general, como más participación, mejor. Se recomienda entre 5-10 miembros.



The screenshot shows the 'sostenipra' web application interface. A green circle with the number '2' is overlaid on the top left. The navigation bar includes 'Home', 'Start Ecodesign', '1 - Definition', '2 - Assessment', '3 - Strategy', and '4 - Report'. The current project is 'Knife' and the state is '1 - Initial definition'. Below the navigation bar, there is a section titled '1.1. Ecodesign Team' with a link to 'Add new member'. The form contains a 'Back' button and input fields for 'Email', 'Name', 'Surname', 'Background', and 'Responsibilities', followed by a 'Submit' button.



3 – DEFINICIÓN INICIAL

DESCRIPCIÓN DEL PROYECTO Y OBJETIVOS

El Coordinador describe el producto a ecodiseñar e indica qué objetivos se persiguen.

1.2. Ecodesign Project Description & Objectives

Please, describe the product/service to be ecodesigned and the objectives that are pursued by using edTOOL.

Name:

Knife

Description:

The reference Knife presents high durability and ergonomics, and is resistant to high temperatures. It is conceived for professional use.

Objectives:

This ecodesign project aims to:

- assess the environmental impact of the reference Knife
- identify environmental improvement strategies
- ecodesign a new Knife



3 – DEFINICIÓN INICIAL

REQUISITOS LEGALES (opcional)

El coordinador describe la legislación y regulaciones más importantes que afectan el producto, las cuales deberán tener en cuenta a la hora de pensar en nuevas estrategias de mejora ambiental.

1.3. Legal requisites Create new legal requisite

Name:

UNE-EN-ISO-8442/1

Description:

Materials and articles in contact with foodstuffs -- Cutlery and table holloware -- Part 1: Requirements for cutlery for the preparation of food



3 – DEFINICIÓN INICIAL

ESTUDIO DE MERCADO (opcional)

El Coordinador puede introducir una descripción e imagen de los productos existentes en el mercado, como referencia.

1.4. Market study Information on competing products/services.

[Optional Step] Please, describe the alternatives to your product already existing in the market.

Add market study

3 records found

Description	Image	
Arcos Titanium Select - Knife with a pure titanium blade		View Edit Delete
Kyotop Knife (Kyocera) - Ceramic blade		View Edit Delete
Martínez & Gascón Knife - Blade recovered by teflon in order to reduce maintenance		View Edit Delete



3 – DEFINICIÓN INICIAL

ADECUACIÓN DELS CRITERIS

Preparación de la evaluación ambiental, que se hará a través de una **Evaluación Cualitativa de los Criterios de Ciclo de Vida**.

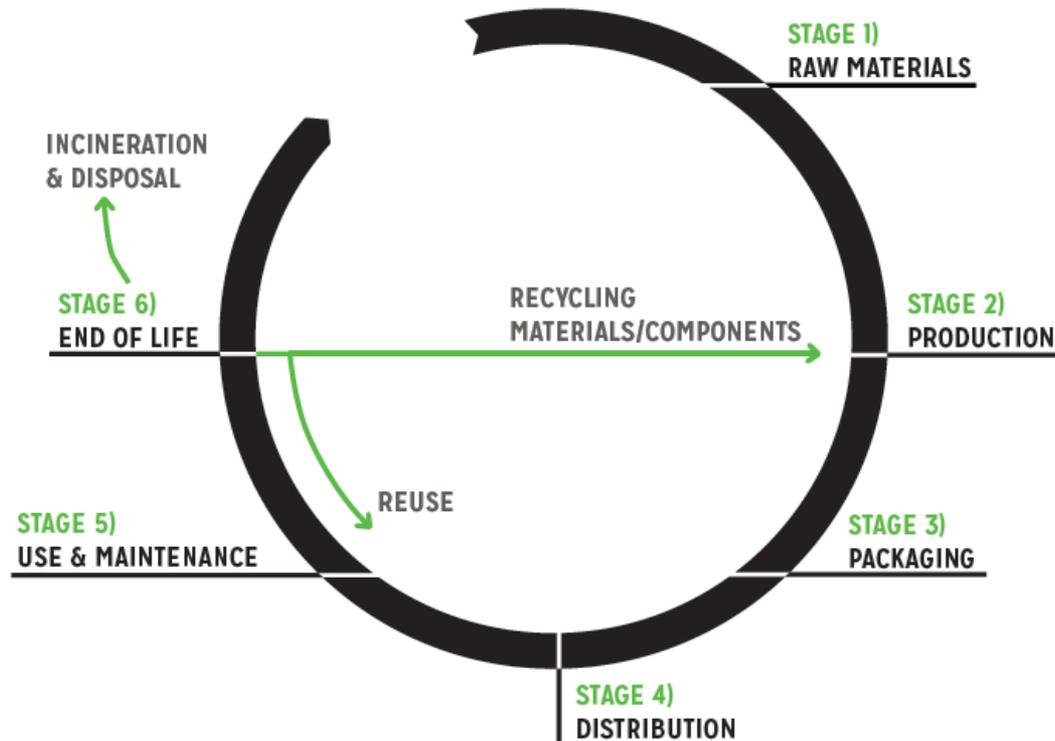
Se trata de una metodología basada en el estudio de las etapas de ciclo de vida, muy útil como primera evaluación ambiental. En síntesis, se ubican las etapas de ciclo de vida en un diagrama de tela de araña sobre el que se muestran las puntuaciones obtenidas por cada etapa a partir de la evaluación de diferentes criterios o aspectos ambientales.



3 – DEFINICIÓN INICIAL

ADECUACIÓN DE LOS CRITERIOS

Preparación de la evaluación ambiental, que se hará a través de una **Evaluación Cualitativa de los Criterios de Ciclo de Vida.**

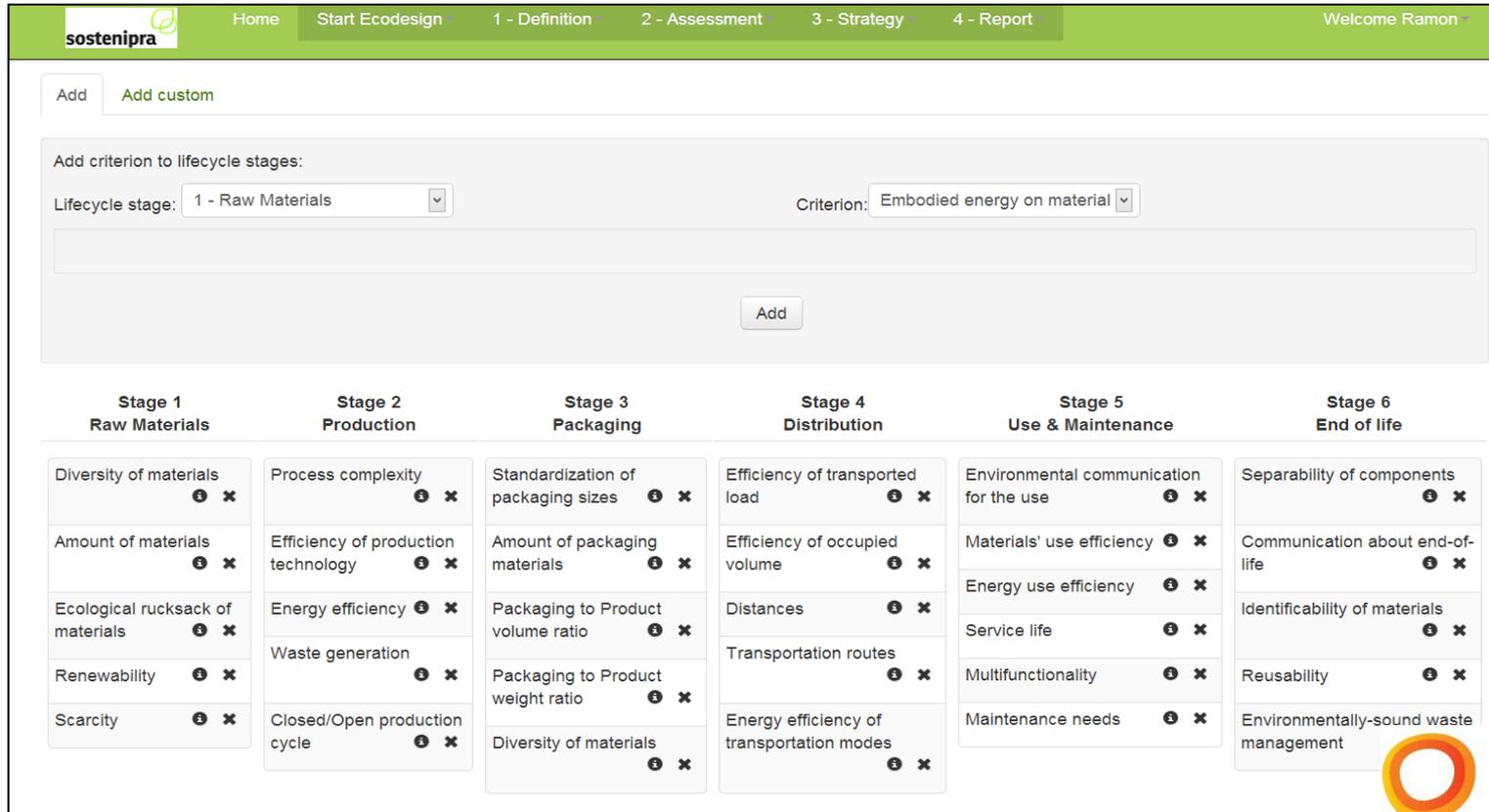




3 – DEFINICIÓN INICIAL

ADECUACIÓN DE LOS CRITERIOS

El Coordinador puede editar la matriz de criterios de ciclo de vida que edTOOL ofrece por defecto (eliminar, añadir predefinidos o añadir nuevos criterios).



The screenshot shows the 'sostenipra' interface with a navigation bar: Home, Start Ecodesign, 1 - Definition, 2 - Assessment, 3 - Strategy, 4 - Report, and Welcome Ramon. Below the navigation bar, there is an 'Add' button with a dropdown menu set to 'Add custom'. A form below this allows adding a criterion to lifecycle stages, with 'Lifecycle stage' set to '1 - Raw Materials' and 'Criterion' set to 'Embodied energy on material'. An 'Add' button is located below the form.

Stage 1 Raw Materials	Stage 2 Production	Stage 3 Packaging	Stage 4 Distribution	Stage 5 Use & Maintenance	Stage 6 End of life
Diversity of materials  	Process complexity  	Standardization of packaging sizes  	Efficiency of transported load  	Environmental communication for the use  	Separability of components  
Amount of materials  	Efficiency of production technology  	Amount of packaging materials  	Efficiency of occupied volume  	Materials' use efficiency  	Communication about end-of-life  
Ecological rucksack of materials  	Energy efficiency  	Packaging to Product volume ratio  	Distances  	Energy use efficiency  	Identifiability of materials  
Renewability  	Waste generation  	Packaging to Product weight ratio  	Transportation routes  	Service life  	Reusability  
Scarcity  	Closed/Open production cycle  	Diversity of materials  	Energy efficiency of transportation modes  	Multifunctionality  	Environmentally-sound waste management  





3 – DEFINICIÓN INICIAL

edTOOL incluye una base de datos genérica de criterios de ciclo de vida (ver Guía de usuario).

ANNEX B) LIFE CYCLE CRITERIA AND STRATEGIES

List of life cycle criteria

	Diversity of materials	<i>It can be represented by the number of different typologies of materials involved in the product. In general, less is better.</i>
	Amount of materials	<i>It can be represented by the weight of the materials involved in the product. The less material has to be used in a product, the less resources will be consumed in the production process.</i>
	Ecological rucksack of materials	<i>An Ecological Rucksack is the total quantity of materials moved from nature to create a product or service, minus the actual weight of the product. That is, ecological rucksacks look at hidden material flows. Ecological rucksacks take a life cycle approach and signify the environmental strain or resource efficiency of the product or service.</i>
	Embodied energy on materials	<i>Embodied Energy is the sum of all the energy required to produce any goods or services, considered as if that energy was incorporated or 'embodied' in the product itself.</i>
	Renewability	<i>A renewable resource is a natural resource which can replenish with the passage of time, either through biological reproduction or other naturally recurring processes.</i>
Materials	Durability	<i>Durability is aimed at extending the lifetime of products thanks to the inherent material properties.</i>
	Scarcity	<i>It refers to the lack or the limited existence of resources that are fundamental for the product or service provided. The more scarce, the worse.</i>
	Recycled content	<i>The proportion, by mass, of recycled material in a product or packaging. Only pre-consumer and post-consumer materials shall be considered as recycled content.</i>
	Recovered components	<i>Recovered materials are products, components or parts of a production or waste stream captured or separated for reuse (without processing, which would be recycling)</i>
	Recyclability	<i>Recyclability refers to the ability of a material to be captured and separated from a waste stream for being recycled</i>
	Biodegradability	<i>Biodegradability refers to the capability of being decomposed by biological agents, especially bacteria.</i>
	Origin of materials	<i>The origin of materials refers to the geographical location from which they are obtained. Local materials are desirable due to shorter distances</i>
	Toxicity	<i>Toxicity refers to the degree to which a substance can damage an organism</i>





3 – DEFINICIÓN INICIAL

ADECUACIÓN DE LOS CRITERIOS

El Coordinador puede editar la matriz de criterios de ciclo de vida que edTOOL ofrece por defecto (eliminar, añadir predefinidos o añadir nuevos criterios).

Add

Add criterion to lifecycle stages:

Lifecycle stage:

Criterion:

It refers to the level of intricateness of the production process. It can be simplified as the number of p

- Process complexity
- Efficiency of production technology
- Energy efficiency**
- Raw materials efficiency
- Origin of energy
- Waste generation
- Interaction with other organizations aiming at ecoefficiency
- Closed/Open production cycle
- Production - market location

Stage 1 Stage 2 Stage 3 Stage 4 Stage 5 Stage 6
Raw Materials Production Packaging Distribution Use & Maintenance End of life

Add

Lifecycle Stage Id:

Name:

Description:

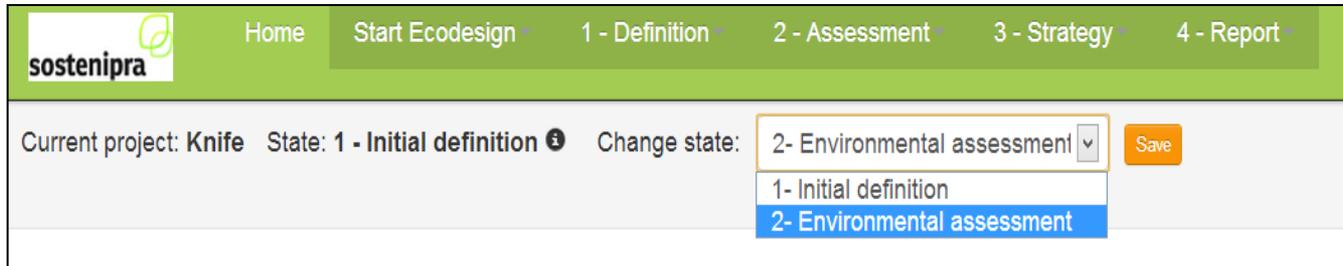




3 – DEFINICIÓN INICIAL

Importante

Una vez definidos los criterios, y para avanzar en la metodología, el coordinador debe cambiar el estado del proyecto.



sostenipra  Home Start Ecodesign 1 - Definition 2 - Assessment 3 - Strategy 4 - Report

Current project: Knife State: 1 - Initial definition ⓘ Change state: Save

- 2- Environmental assessment
- 1- Initial definition
- 2- Environmental assessment

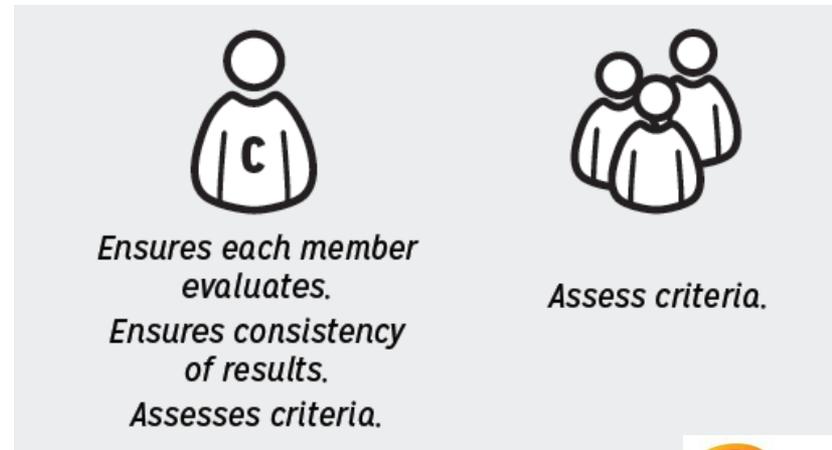




4 – AVALUACIÓN AMBIENTAL

Paso 2. Evaluación ambiental

A lo largo de este paso, cada miembro del equipo evaluará los criterios de ciclo de vida previamente definidos.





4 – AVALUACIÓN AMBIENTAL

AVALUACIÓN DE LOS CRITERIOS

Cada miembro del equipo evalúa los diferentes criterios, con una escala de 1 a 5.

1	Enormous room for improvement (0%)
2	Big room for improvement (25%)
3	Some room for improvement (50%)
4	Small room for improvement (75%)
5	No room for improvement (100%)
0	No data available / not applicable





AVALUACIÓN DE LOS CRITERIOS

Cada miembro del equipo evalúa los diferentes criterios, con una escala de 1 a 5.

 Home
Welcome Ramon

[Start Ecodesign](#) | [1 - Definition](#) | [2 - Assessment](#) | [3 - Strategy](#) | [4 - Report](#)

2.1. Environmental Assessment

Please, assess each lifecycle criterion (from 1 to 5) using the given (scale▼)

Make sure to use integer values and leave a '0' if you do not have the information to answer. Finally, click 'Save' when you are finished.

The results of the assessment will be made available when the coordinator changes the state of the project to **3-Strategy Selection**.

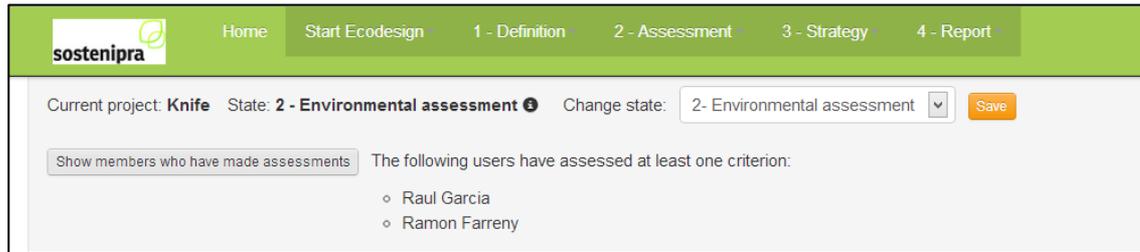
Stage 1 Raw Materials	Stage 2 Production	Stage 3 Packaging	Stage 4 Distribution	Stage 5 Use & Maintenance	Stage 6 End of life
Diversity of materials <input type="text" value="5"/>	Energy efficiency <input type="text" value="2"/>	Amount of packaging materials <input type="text" value="3"/>	Environmental impact of transportation system <input type="text" value="3"/>	Environmental communication for the use <input type="text" value="2"/>	Separability of components <input type="text" value="2"/>
Amount of materials <input type="text" value="2"/>	Water efficiency <input type="text" value="3"/>	Diversity of materials <input type="text" value="4"/>	Optimization of distribution <input type="text" value="4"/>	Materials' use efficiency <input type="text" value="3"/>	Identifiability of materials <input type="text" value="5"/>
Recycled content <input type="text" value="2"/>	Renewability of energy <input type="text" value="4"/>	Recyclability <input type="text" value="4"/>	Optimization of internal transports <input type="text" value="3"/>	Maintenance needs <input type="text" value="2"/>	Recyclability potential <input type="text" value="4"/>
Recyclability <input type="text" value="3"/>	Treatment of generated waste <input type="text" value="4"/>	Recycled content <input type="text" value="3"/>		Environmental Communication for the Maintenance <input type="text" value="3"/>	
Origin of materials <input type="text" value="3"/>	Wastewater management <input type="text" value="4"/>	Packaging Reuse/ Recovery Rate <input type="text" value="4"/>		Low-maintenance materials <input type="text" value="5"/>	
	Metal waste generation <input type="text" value="2"/>				
	Non-metal waste production <input type="text" value="3"/>				



4 – AVALUACIÓN AMBIENTAL

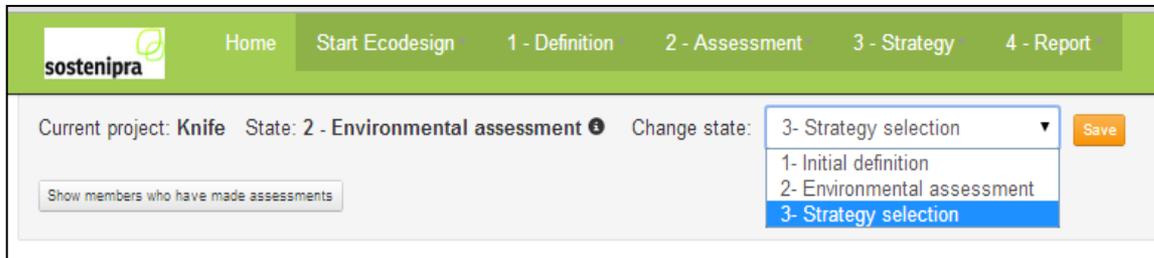
AVALUACIÓN DE LOS CRITERIOS

El coordinador puede visualizar quien ha evaluado ya los criterios.



The screenshot shows the 'sostenipra' web interface. The navigation bar includes 'Home', 'Start Ecodesign', and a progress indicator with four steps: '1 - Definition', '2 - Assessment', '3 - Strategy', and '4 - Report'. The current project is 'Knife' and the state is '2 - Environmental assessment'. A 'Change state' dropdown menu is set to '2 - Environmental assessment' with a 'Save' button. Below this, a button labeled 'Show members who have made assessments' is followed by the text 'The following users have assessed at least one criterion:'. A list of users is shown: Raul Garcia and Ramon Farreny.

Para procesar los datos obtenidos por el equipo (obtener medias), el Coordinador debe avanzar hacia el siguiente estado (estado 3).



The screenshot shows the 'sostenipra' web interface. The navigation bar is the same as in the previous screenshot. The current project is 'Knife' and the state is '2 - Environmental assessment'. The 'Change state' dropdown menu is now open, showing three options: '3 - Strategy selection' (highlighted in blue), '1 - Initial definition', and '2 - Environmental assessment'. A 'Save' button is visible to the right of the dropdown. The 'Show members who have made assessments' button is also present.



RESULTADOS DE AVALUACIÓN AMBIENTAL

Se obtienen medias para cada criterio y etapa de ciclo de vida.

 Home Start Ecodesign 1 - Definition 2 - Assessment 3 - Strategy 4 - Report
Welcome Ramon

Current project: **Knife** State: **3 - Strategy selection** Change state: 3- Strategy selection Save

2.2. Environmental Assessment Results

This section shows the results of the environmental assessment for your product/service. You can check the (scale▼) used for the assessment.

The main table below shows the average score for each life cycle criteria and life cycle stage. In addition, you can check the individual results of each member.

Besides, two graphic representations of the results are available: the *spider diagram* and the *criteria averages chart*. Click on the blue buttons to see them. Remember that the smaller the score, the worse environmental the performance.

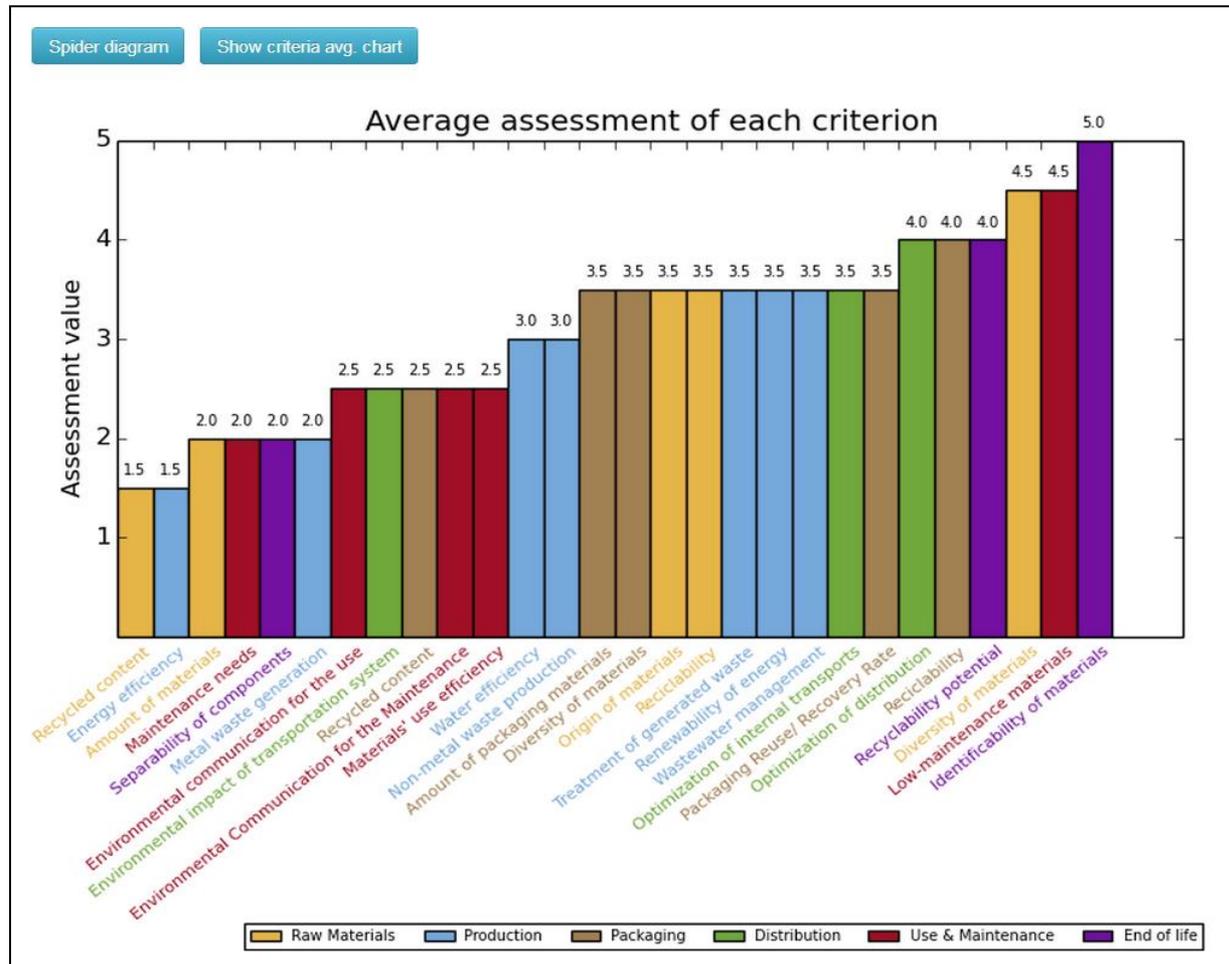
View results per member Spider diagram Show criteria avg. chart

Stage 1 Raw Materials	Stage 2 Production	Stage 3 Packaging	Stage 4 Distribution	Stage 5 Use & Maintenance	Stage 6 End of life
<p>Diversity of materials 3 4.5</p> <p>Amount of materials 3 2.0</p> <p>Origin of materials 3 3.5</p> <p>Recyclability 3 3.5</p> <p>Recycled content 3 1.5</p> <p>Average: 3.0</p> <p>Std. relative dev.: 0.41</p>	<p>Water efficiency 3 3.0</p> <p>Treatment of generated waste 3 3.5</p> <p>Renewability of energy 3 3.5</p> <p>Wastewater management 3 3.5</p> <p>Metal waste generation 3 2.0</p> <p>Non-metal waste production 3 3.0</p> <p>Energy efficiency 3 1.5</p> <p>Average: 2.86</p> <p>Std. relative dev.: 0.28</p>	<p>Amount of packaging materials 3 3.5</p> <p>Diversity of materials 3 3.5</p> <p>Recyclability 3 4.0</p> <p>Recycled content 3 2.5</p> <p>Packaging Reuse/ Recovery Rate 3 3.5</p> <p>Average: 3.4</p> <p>Std. relative dev.: 0.16</p>	<p>Optimization of distribution 3 4.0</p> <p>Optimization of internal transports 3 3.5</p> <p>Environmental impact of transportation system 3 2.5</p> <p>Average: 3.33</p> <p>Std. relative dev.: 0.23</p>	<p>Environmental communication for the use 3 2.5</p> <p>Maintenance needs 3 2.0</p> <p>Environmental Communication for the Maintenance 3 2.5</p> <p>Materials' use efficiency 3 2.5</p> <p>Low-maintenance materials 3 4.5</p> <p>Average: 2.8</p> <p>Std. relative dev.: 0.35</p>	<p>Separability of components 3 2.0</p> <p>Identifiability of materials 3 5.0</p> <p>Recyclability potential 3 4.0</p> <p>Average: 3.67</p> <p>Std. relative dev.: 0.42</p>



RESULTADOS DE EVALUACIÓN AMBIENTAL

Se obtienen medias para cada criterio y etapa de ciclo de vida.





4 – AVALUACIÓN AMBIENTAL

RESULTADOS DE EVALUACIÓN AMBIENTAL

Las puntuaciones individuales pueden ser visualizadas por el coordinador.

sostenipra		Home	Start Ecodesign	1 - Definition	2 - Assessment	3
View average results						
Raw Materials				Ramon Farreny	Raul Garcia	
Diversity of materials	5	5	4	4		
Amount of materials	2	2	2	2		
Recycled content	2	2	1	1		
Recyclability	3	3	4	4		
Origin of materials	3	3	4	4		
Production				Ramon Farreny	Raul Garcia	
Energy efficiency	2	2	1	1		
Water efficiency	3	3	3	3		
Renewability of energy	4	4	3	3		
Treatment of generated waste	4	4	3	3		
Wastewater management	4	4	3	3		
Metal waste generation	2	2	2	2		
Non-metal waste production	3	3	3	3		
Packaging				Ramon Farreny	Raul Garcia	
Amount of packaging materials	3	3	4	4		
Diversity of materials	4	4	3	3		
Recyclability	4	4	4	4		
Recycled content	3	3	2	2		
Packaging Reuse/ Recovery Rate	4	4	3	3		

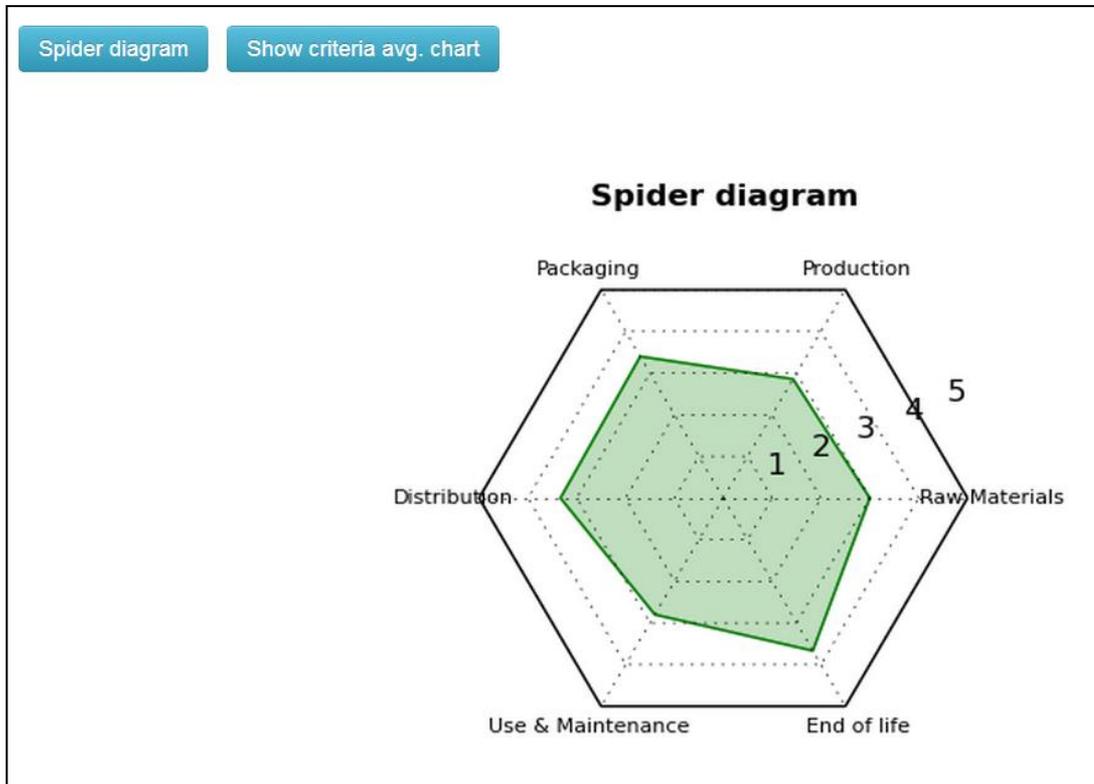




4 – AVALUACIÓN AMBIENTAL

RESULTADOS DE EVALUACIÓN AMBIENTAL

Resultados principales: diagrama de tela de araña

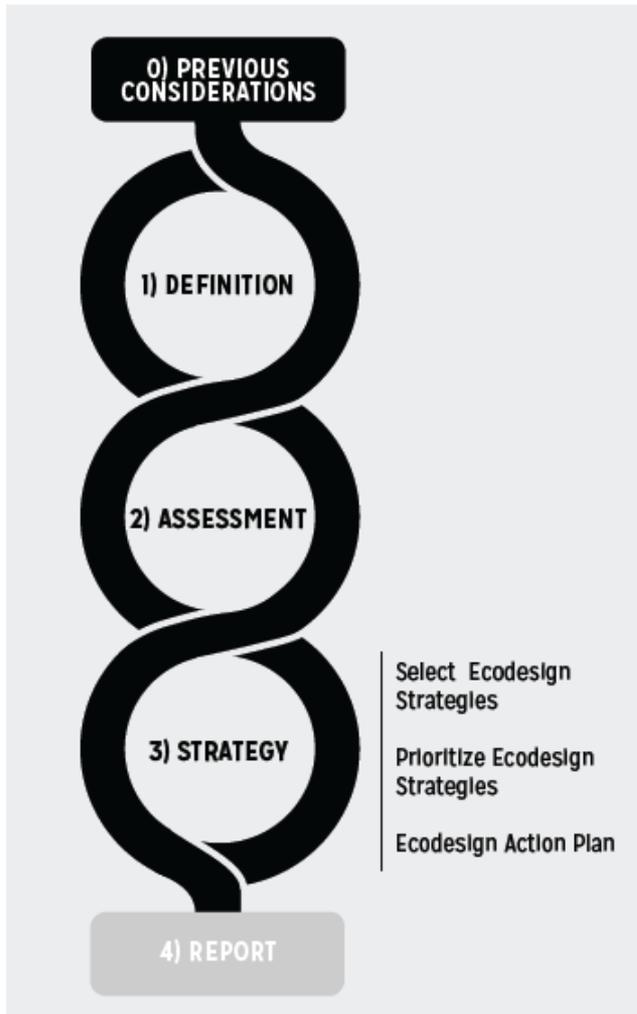


La evaluación ambiental muestra en qué etapas de ciclo de vida se debe prestar atención, a fin de mejorar su actuación ambiental.

Con esta información, **edTOOL** sugiere una serie de estrategias de mejora ambiental.



5 – ESTRATEGIAS



Pas 3. Evaluación de estrategias

En este paso, se seleccionan las estrategias de mejora potenciales, se priorizan y se materializan en un Plan de Acción.





edTOOL incluye una base de datos de estrategias de mejora ambiental generales, que podrían ser aplicadas al ecodiseño de productos. Estas se agrupan en etapas de ciclo de vida.

List of environmental improvement strategies

	Reduce number of different types of material	<i>In general, a reduced number of different types of materials is desirable, since it simplifies all life cycle stages (e.g. procurement of materials, production processes, management of wastes, etc.). However, this strategy may be difficult to achieve for reasons of function, strength, etc.</i>
	Reduce material input by design aiming at durability	<i>This strategy aims to reduce the use of materials to the minimum, always considering the requirements of the product (strength, durability, service life, etc.).</i>
	Reduce material input by means of dematerialization	<i>Dematerialization is the replacement of a physical product with a non-physical product or service, thereby reducing the production, demand and use of physical products; and reducing the end-user's dependence on physical products. In implementing this strategy, several benefits may be achieved: cost-savings in materials, energy, transportation, consumables and the need to manage the eventual disposal and/or recycling of a physical product.</i>
	Reduce material input by means of a simple principle of functioning	<i>The reduction of non structural parts and of connecting parts allows to reduce the consumption of resources, as well as to a reduction of assembly and disassembly times.</i>
	Reduce material input by means of multifunctionality	<i>The combination of functions into one product reduces the consumption of material per function. Therefore, the consumed resources are used to provide several functions, for which reason the generated impacts could be partially allocated to each of the functions.</i>
Materials	Use materials and components with lower ecological rucksack	<i>The consumption of resources for the supply of raw materials and the manufacture of external parts and components has an ecological rucksack, that is aggregated into the product's rucksack. Consequently, efforts should concentrate on minimizing the ecological rucksacks accompanying materials and other external parts and components. This may be realized by clearly defined requirements for the selection of suppliers, for which different assessment methods exist. In most cases indicators will be calculated from life cycle analysis data (LCA), which can be used as a basis for the assessment of the environmental impact of materials. Of course, each of the methods used yields results only within its own bounds. Therefore, knowing these limits and the potential environmental impact not detected by a given method is essential for application in practice.</i>
	Select suppliers and products under ecolabelling systems or providing environmental information	<i>Certified and ecolabelled materials are preferable</i>
	Select materials of low energy intensity	<i>Materials with low energy intensity or low embodied energy are preferable, since they reduce the cumulative energy demand of the offered product/service.</i>
	Prioritize renewable raw materials	<i>Renewable raw materials are not of fossil origin but are made, in most cases, from plants. Their use presents benefits, since other limited resources are not used and, in addition, it provides for adequate disposal.</i>
	Prioritize materials that are abundant in the environment and avoid scarce materials	<i>The use of materials that are abundant provides for greater opportunities to obtain them and avoids the depletion of other resources that are scarcer.</i>



5 – ESTRATEGIAS

SELECCIÓN DE ESTRATEGIAS DE ECODISEÑO

El Coordinador, junto con el equipo, revisará las estrategias sugeridas y evaluará si:

- Son **apropiadas** para el producto evaluado (es decir, si tiene sentido aplicar aquella estrategia)
- Ya se han **aplicado** en el producto evaluado





5 – ESTRATEGIAS

SELECCIÓN DE ESTRATEGIAS DE ECODISEÑO

Strategy	Appropriate	Completed	Delete
Lifecycle stage: Production			
Minimize and simplify the production processes ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use low material input, low emission production technologies ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Use efficient energy technologies in the production process ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Use techniques that optimize energy use ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use water efficient technologies in the production process ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use technologies that optimize raw materials use in the production process ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Preferably use renewable energy resources along the production process ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Preferably use regionally available energy resources ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Use techniques that reduce the generation of waste and emissions ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduce fraction of rejects in production process ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Recycle process materials whenever possible ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Search for synergies and symbioses with neighbouring companies and organizations ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Close material cycles in the production process ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Recycle and reuse waste for new products/materials ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use parts of identical design for different products ⓘ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Locate the production plant as close as possible to the market ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



5 – ESTRATEGIAS

SELECCIÓN DE ESTRATEGIAS DE ECODISEÑO

Se pueden añadir otras estrategias (predefinidas o nuevas)

 Home
Welcome Ramon

3.1. Selection of ecodesign strategies

Based on the previous environmental assessment, edTOOL suggests a series of ecodesign strategies that could be applied to your product/service. These strategies correspond to those 2 life cycle stages with worse environmental performance. Please, feel free to add other predefined strategies from the list under the **Add Strategy** label, or define new strategies under the **New Custom strategy** label. For your guidance, please, note that the User Guide includes a list of potential ecodesign strategies and a brief description of each of them.

Once the list is ready, please check if the strategies are appropriate for your product/service and if they have already been completed/applied. Only those strategies that are marked as *Appropriate* and that are not marked as *Completed* will be considered for further evaluation.

Add strategy
New custom strategy

Select strategy to add:

Lifecycle stage:

Strategy:

Reduce number of different types of material

Reduce material input by design aiming at durability

Reduce material input by means of dematerialization

Reduce material input by means of a simple principle of functioning

Reduce material input by means of multifunctionality

Use materials and components with lower ecological rucksack

Select suppliers and products under ecolabelling systems or providing environmental information

Select materials of low energy intensity

Prioritize renewable raw materials

Prioritize materials that are abundant in the environment and avoid scarce materials

Prioritize materials with a high recycled content

Use of recovered components

Prioritize recyclable materials

Select biodegradable materials

Select local materials to reduce transportation demand

Select materials without toxic, nocive and harmful substances

Add

Strategy

Lifecycle stage: **Production**

Minimize and simplify the production processes ?

Use low material input, low emission production technologies ?

Use efficient energy technologies in the production process ?

5 – ESTRATEGIAS

PRIORIZAR ESTRATEGIAS DE ECODISEÑO

El filtro anterior reduce el número de estrategias de mejora ambiental en un listado más manejable, el cual será evaluado en términos de impacto social, económico y técnico.

5	Excellent viability
4	Good viability
3	Average viability
2	Fair viability
1	Poor viability
0	No data available / not applicable



5 – ESTRATEGIAS

PRIORIZAR ESTRATEGIAS DE ECODISEÑO

El filtro anterior reduce el número de estrategias de mejora ambiental en un listado más manejable, el cual será evaluado en términos de impacto social, económico y técnico.

sostenipra Home Start Ecodesign 1 - Definition 2 - Assessment 3 - Strategy 4 - Report Welcome Ramon

3.2. Prioritization of ecodesign strategies

Please, assess the viability each ecodesign strategy (from 1 to 5) using the given (scale▼)

Check the strategies you want to include in the action plan. We suggest that you select **at least**, the strategies with a viability equal or higher than 4.0.

Once you have completed the assessment and selected the strategies to be included in the Action Plan, please click on **Save**.

Description	Social	Economic	Technical	Avg.	Action plan
Lifecycle stage: Raw Materials					
Reduce material input by means of dematerialization ⓘ	4	4	4	4.00	<input checked="" type="checkbox"/>
Prioritize recyclable materials ⓘ	3	2	3	2.67	<input type="checkbox"/>
Prioritize materials with a high recycled content ⓘ	4	4	4	4.00	<input checked="" type="checkbox"/>
Lifecycle stage: Production					
Minimize and simplify the production processes ⓘ	4	5	3	4.00	<input checked="" type="checkbox"/>
Use water efficient technologies in the production process ⓘ	4	2	3	3.00	<input type="checkbox"/>
Use technologies that optimize raw materials use in the production process ⓘ	4	4	3	3.67	<input type="checkbox"/>
Use techniques that reduce the generation of waste and emissions ⓘ	4	5	3	4.00	<input checked="" type="checkbox"/>
Recycle process materials whenever possible ⓘ	3	2	1	2.00	<input type="checkbox"/>
Lifecycle stage: Use & Maintenance					
Introduce environmental communication in order to foster a responsible use of the product/service ⓘ	5	5	4	4.67	<input checked="" type="checkbox"/>
Promote an efficient use of materials during use ⓘ	5	5	3	4.33	<input checked="" type="checkbox"/>
Promote an efficient use of energy during use ⓘ	3	3	2	2.67	<input type="checkbox"/>
Ensure high appreciation of the product ⓘ	4	3	2	3.00	<input type="checkbox"/>

Save

Una vez evaluadas, el Coordinador podrá priorizar qué estrategias se deben incluir en el **Plan de Acción**.



5 – ESTRATEGIAS

PLAN DE ACCIÓN

El equipo define acciones concretas a llevar a cabo, con el fin de dar respuesta a las estrategias priorizadas. Se establecerán acciones, responsabilidades y calendarios.

sostenipra
Welcome RamonHome
Start Ecodesign
1 - Definition
2 - Assessment
3 - Strategy
4 - Report

3.3. Ecodesign Action Plan

Please, define concrete actions to be carried out in order to materialize the selected ecodesign strategies, and establish responsibilities and deadlines.
When the Action Plan is ready, the coordinator will be able to move forward to the **4-Summary Report** state.

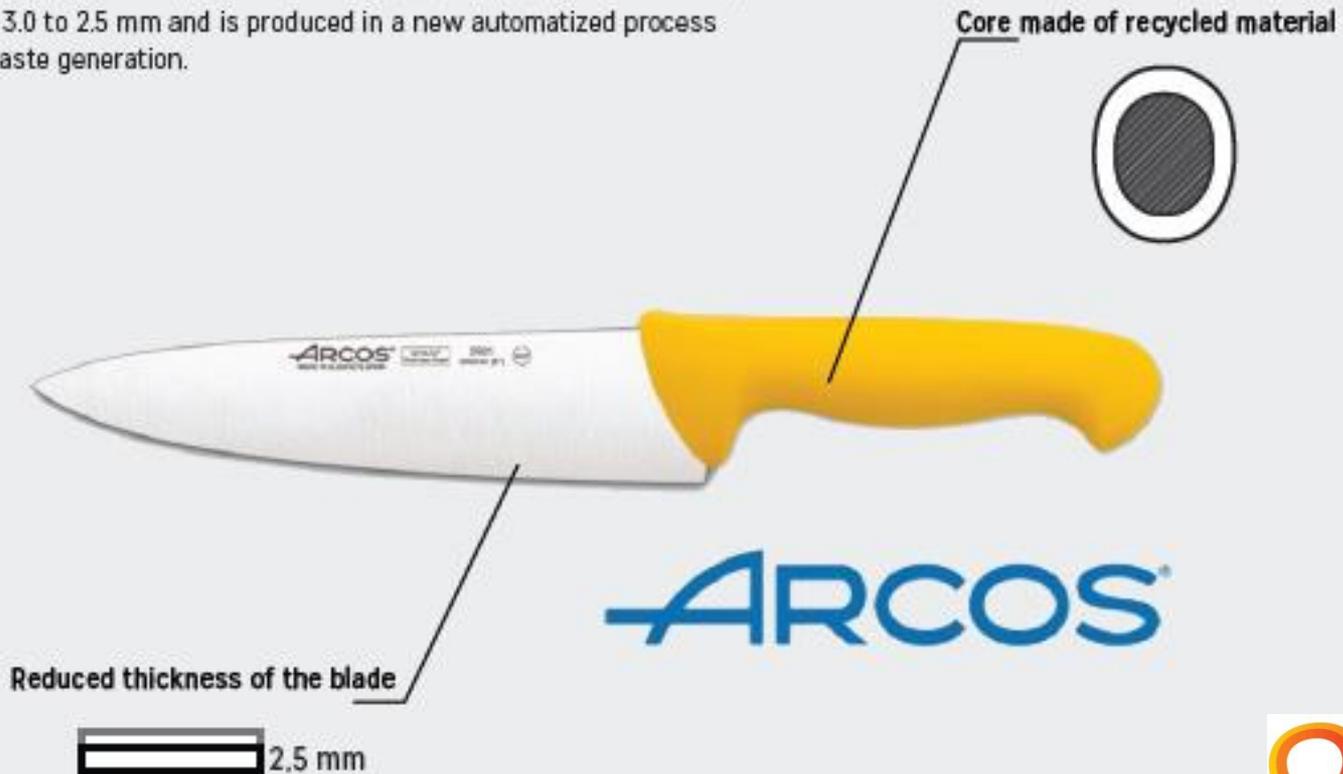
Strategies	Actions		
Lifecycle stage: Raw Materials			
Reduce material input by means of dematerialization ❗	Add action		
	Action	Deadline	Responsible
	✂ Reduce the thickness of the blade (from 3 to 2.5 mm)	2015-01-01	Head of Technical Department
Prioritize materials with a high recycled content ❗	Add action		
	Action	Deadline	Responsible
	✂ Handle with recycled PP content inside and virgin PP outside (by means of co-injection)	2014-06-01	Head of Technical Department
Lifecycle stage: Production			
Minimize and simplify the production processes ❗	Add action		
	Action	Deadline	Responsible
	✂ Automatization of metal die-cast process to reduce process waste	2016-01-01	Head of Technical Department



PLAN DE ACCIÓN

New ecodesigned Knife by ARCOS

The practical implementation of the Action Plan for the Knife Case Study results in the product presented in Figure . One can see the use of recycled material in the handle core as well as the new blade of the knife, which has reduced the thickness from 3.0 to 2.5 mm and is produced in a new automatized process that reduces waste generation.





5 – ESTRATEGIAS

PLAN DE ACCIÓN

Una vez finalizado, el Coordinador puede avanzar al siguiente estado.



The screenshot shows the 'sostenipra' web interface. The navigation bar includes 'Home', 'Start Ecodesign', '1 - Definition', '2 - Assessment', '3 - Strategy', and '4 - Report'. The main content area displays 'Current project: Knife' and 'State: 4 - Summary report'. A 'Change state:' dropdown menu is open, showing options: '4 - Summary report' (selected), '1 - Initial definition', '2 - Environmental assessment', '3 - Strategy selection', and '4 - Summary report'. A 'Save' button is visible to the right of the dropdown.



6 – INFORMES



Paso 4. Informes

En este paso se pueden obtener informes de síntesis, con los principales resultados del proyecto.



Generates the report.



6 – INFORMES

INFORME DE SÍNTESI

Los contenidos del informe de síntesis están predefinidos, para establecer un sistema común para reportar los resultados en el uso de la **edTOOL**:

- Equipo de trabajo
- Descripción y objetivos
- Evaluación ambiental (incluye diagrama de araña)





6 – INFORMES

INFORME DE SÍNTESI

sostenipra Home Start Ecodesign 1 - Definition 2 - Assessment 3 - Strategy 4 - Report Welcome Ramon

Current project: Knife State: 4 - Summary report Change state: 4 - Summary report See

4.1. Summary report

Knife

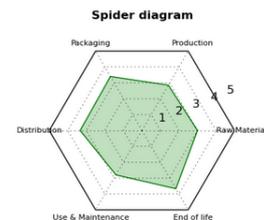
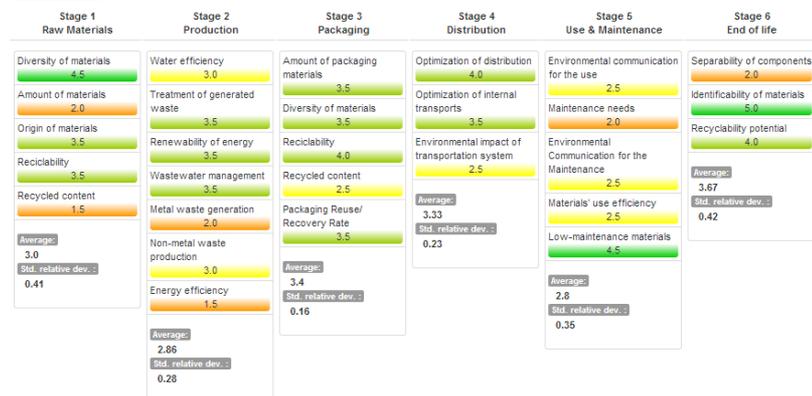
Ecodesign Team

Name	Email	Background	Responsibilities
Ramon Farreny	indep@hotmail.com	CEO	Coordinator
Raul Garcia	raul@ineditinnova.com	Industrial Designer	Conceptual design
Esther Sanye	esther.sanye@ub.cat	Environmental Sciences	Environmental Assessment

Description & Objectives

Description	The reference Knife presents high durability and ergonomics, and is resistant to high temperatures. It is conceived for professional use.
Objectives	This ecodesign project aims to: - assess the environmental impact of the reference Knife - identify environmental improvement strategies - ecodesign a new Knife

Lifecycle Assessment



Action plan

Strategies	Actions		
Lifecycle stage: Raw Materials			
Reduce material input by means of dematerialization	Action Reduce the thickness of the blade (from 3 to 2.5 mm)	Deadline 2015-01-01	Responsible Head of Technical Department
Prioritize materials with a high recycled content	Action Handle with recycled PP content inside and virgin PP outside (by means of co-injection)	Deadline 2014-05-01	Responsible Head of Technical Department
Lifecycle stage: Production			
Minimize and simplify the production processes	Action Automatization of metal die-cast process to reduce process waste	Deadline 2016-01-01	Responsible Head of Technical Department
Use techniques that reduce the generation of waste and emissions	Action See previous action	Deadline None	Responsible None
Reduce fraction of rejects in production process	Action See previous action	Deadline None	Responsible None
Lifecycle stage: Use & Maintenance			
Introduce environmental communication in order to foster a responsible use of the product/service	Action Include information regarding an appropriate maintenance of the knife (e.g how to use the cloth provided with the knife to clean it)	Deadline 2014-04-01	Responsible Head of Technical Department



INFORME CUSTOMIZADO

El Coordinador puede generar un informe a medida y elegir qué información quiere incluir.

 Home Start Ecodesign ▾ 1 - Definition ▾ 2 - Assessment ▾ 3 - Strategy ▾ 4 - Report ▾

Current project: Knife State: 4 - Summary report ⓘ Change state: 4- Summary report ▾ Save

4.2. Summary report Annex

Choose the elements you want to include in the report:

- Project name
- 1.1. Ecodesign Team
- 1.2. Description & Objectives
- 1.3. Legal requisites
- 1.4. Market study
- 2.2. Lifecycle assessment
- 2.2. Spider diagram
- 2.2. Lifecycle assessment bar chart
- 3.1. Ecodesign Strategies
- 3.2. Ecodesign Strategy Prioritization
- 3.2. Strategies assessment bar chart
- 3.3. Action Plan

Generate



ed**TOOL**

ecodesign tool

Taller de Ecodiseño (TF-11). Madrid, 29 de Noviembre de 2016

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