

# Ardo Corporate Responsibility Report

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We preserve nature's precious gifts

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## Dealing with the here and now... ...and preparing for the future!

In 2010 Ardo witnessed its market - both suppliers and customers - struggle to come to terms with the global economic downturn. At the same time, the company's production costs increased due to high oil prices, and its crop availability was affected by extreme weather, with dry conditions for the first half of the year followed by persistent rain and frost and snow at the end of the year.

To compound difficulties, strong agricultural commodity prices mean that raw material costs will increase in the coming years. Thus, **2010 confirmed the importance of sustainability for Ardo.**

It was not just a question of how the business could demonstrate its environmental sustainability over an extended period. There was a more urgent question to address, in **'How does a European frozen fruit and vegetable business respond to the current market situation and remain profitable in the short, medium and long term?'**

This new set of challenges inspired Ardo to re-examine its operational strategy in detail, and to study its environmental sustainability and social responsibilities via a group-wide investigation. The study considered the company's agricultural resources and climatic conditions in the different growing regions, its human resources and its factories' resources (and constraints). Each crop,

and each Ardo site, was scrutinised. Operating efficiencies, energy use, field and factory yields, product quality, production seasons, market requirements and the potential for future savings were discussed and compared. As a result, a number of areas were identified where changes to operational practices would deliver major improvements.

By the end of 2010, the plan to streamline the business - involving considerable simplification and specialisation - was finalised and well on the way to being implemented. In the short term, the company's priority is to introduce the changes as smoothly as possible, whilst providing the maximum respect, sensitivity and support for all the Ardo personnel affected by them.

The plan will deliver improved efficiencies and factory yields, and reduce electricity, gas and water use across the group. The initial benefits will start to be seen as early as 2011, with the real advantage coming in 2012 and 2013. Ardo's directors are convinced that the reorganising and repositioning of the business set out in this plan will ensure that Ardo's position as a leading European fruit and vegetable processor is maintained for years to come.

Ardo Management Committee



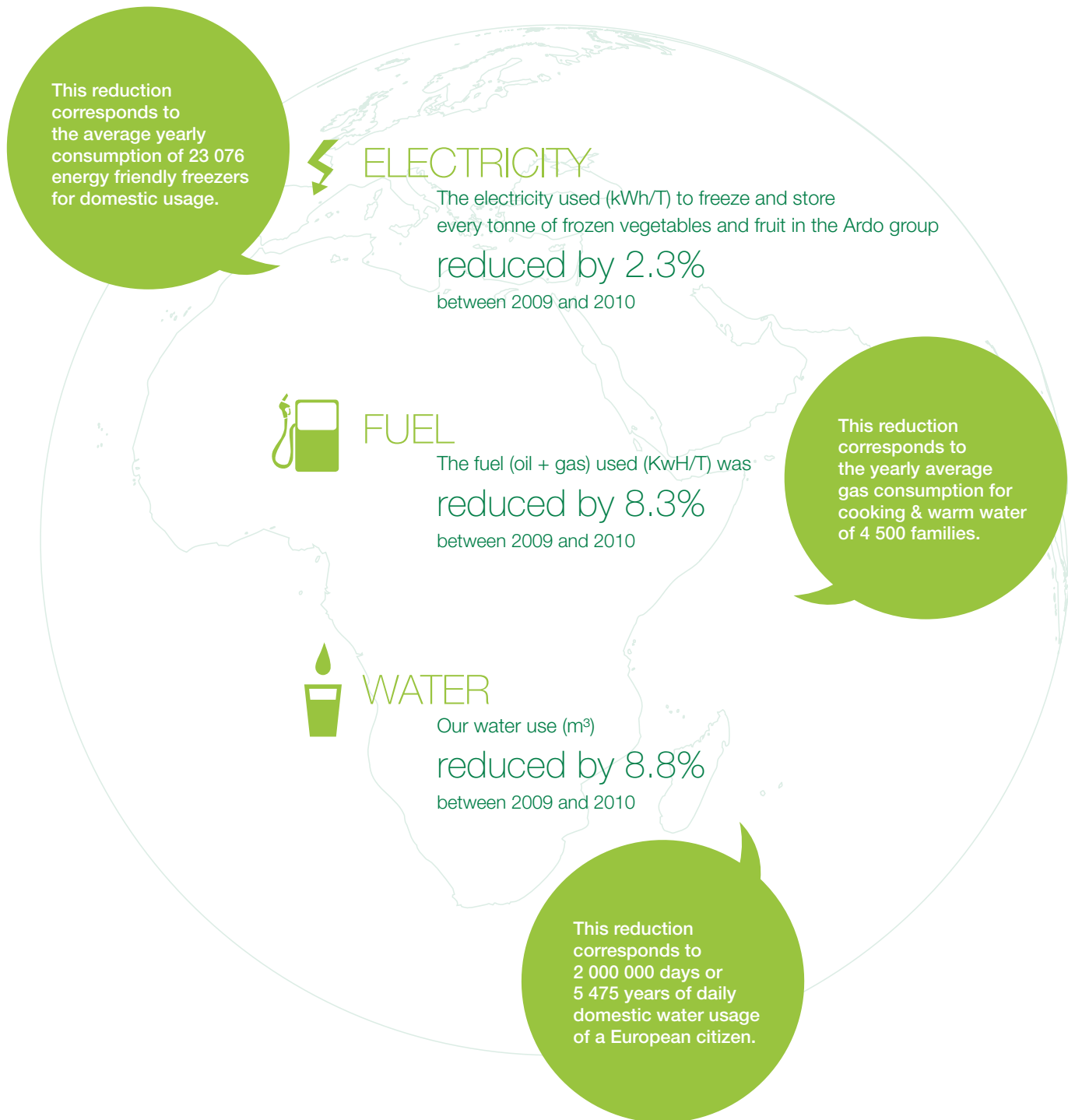


# PLANET

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# 1 Evolution of natural resources 2009 - 2010

We are constantly working to improve our operating efficiency in every area of our business. By investing in more efficient equipment and techniques, by increasing employee awareness and by motivating our production teams to operate in the most efficient way, we have achieved the following reductions in the resources that we use to produce every tonne of frozen product that we sell:



## 2 Sustainable growing and the story behind our products



In this year's Corporate Responsibility Report, we take an in-depth look at how our raw materials - fresh vegetables grown for Ardo and delivered to our factories at the peak of ripeness - are produced. We explain how we work with our growers and describe our crop production systems, which guarantee that the Ardo factories are supplied with the best raw materials available, produced using truly sustainable farming methods.

This follows on from our last report (May 2010), where we listed the priorities identified by governments for securing Europe's food supplies and we explained the role that Ardo's frozen fruit and frozen vegetables can play in the sustainable production of healthy food, available to everyone and affordable to everyone.

## Our growers



### Our growers and their land come first

Relying on locally grown vegetables to supply our freezing factories day-in and day-out, year-in, year-out, at Ardo we have spent years identifying the optimal growing areas to locate our vegetable freezing facilities. These factories are now situated in the middle of some of the most fertile vegetable-growing lands in Europe. With the investments made and the factories constructed, it is critical for us at Ardo to secure the supply of our raw materials and to provide an operating framework which ensures that our farmers, and the fields surrounding our factories, can continue to grow environmentally and socially sustainable, premium quality produce, from one generation to the next.

At Ardo, we place a huge importance on our relationships with our farmers. These relationships (often in the second generation) are built on mutual respect, trust, understanding and mutual benefit. We use our team of more than 40 agronomists, to maintain the link with our farmers and to improve the understanding of each others' businesses and shared objectives.

### Conscious and Intelligent Agriculture through Cooperation

For every one of the 40 000 hectares of vegetables grown for Ardo, we have the same clear objective: **'To grow high quality, commercially viable crops in a sustainable way, with consideration for the environment'**.

Ardo, and the vast majority of our farmers, are partners in **Producer Organisations** that have clearly defined rules established by the European Community. These organisations provide the perfect platform for coordinated investments in research, in introducing the latest on-farm technology, in maintaining and improving yields and product quality, and in implementing environmentally friendly measures that reduce the impact of farming operations and support the biodiversity of our natural landscapes.

The professionally-managed Producer Organisations give structure and support, and deliver the information necessary to ensure that our agronomists, and our growers, are positioned at the leading edge of European agriculture. The creation of these groups makes it easier to maintain perspective and to identify priorities that will benefit both our growers, and the Ardo business, in the future.



## In the field

### Minimising inputs and maximising outputs

The most effective way to reduce the impact that food production has on the environment is to increase the harvested yield per hectare and to ensure that every single kilogram of crop is handled or preserved in such a way that it can reach its intended market and be consumed.



### Providing the best start

The seed is the starting point for our whole operation. If the seed is poor, everything else to follow will be problematic. Ardo has been working with seed houses on the development of varieties with a high degree of resistance to diseases such as mildew.

When it comes to purchasing seed, however, we do not only rely on the information provided by the companies that are selling the seed. We perform our own in-house seed analysis (140 analyses in 2010) to determine **germination rate, vigour and the percentage of 'off-type' seeds** in the batch. By verifying the seed quality, we ensure that we always take informed decisions when purchasing seed and only sow the best seed available on the market.



### Introducing new technology

With recent advancements in agricultural applications of Global Positioning Systems (GPS), Ardo has been evaluating the benefits of this technology mounted on tractors and harvesting machines.

By using GPS to guide tractors during sowing, crop spraying and spreading fertiliser, the distance travelled, as well as the overlaps and misses, have been minimised.

Reducing the distance travelled in the field reduces the compaction caused by tractor tyres and gives a more precise placement of the seed, plant protection products and fertiliser. **The technology has provided a reduction of 5% in seed use and a reduction of 7% in fertiliser and agro chemical use.**



## Water management

Approximately 70% of the global water currently extracted from rivers or aquifers is used for agricultural purposes<sup>1</sup>. In future, the efficient management of water used in agriculture is expected to become a global priority.

Ardo has been introducing soil water deficit measuring devices (tensiometers) to provide technical guidance to growers on when, and how much, to irrigate. The potential savings are greater on crops with high water demands and in climates where high evapotranspiration rates are common. **In 2010, we reduced by 35% the water used to grow our Portuguese crops.**

## Efficient harvesting whilst avoiding damage to soil structure

For mechanically harvested crops, we have been working with machinery manufacturers to improve harvest yields, whilst reducing damage to the product and to the soil structure and reducing the diesel used to harvest each hectare.

An example of this is pea harvesting (peas represent around 40% of Ardo's total growing area). On fields where the soil is susceptible to compaction, pea viners are mounted on rubber caterpillar tracks.

The tracks spread the machine's weight and **reduce the pressure on the soil to approximately one quarter of the pressure from standard tyres.**

Elsewhere in the Ardo group, a new generation of pea viners are being introduced that provide a **30% fuel saving** over the machines that they replace.

GPS is being used on our pea viners to ensure that the most efficient route is taken during vining and to reduce the percentage of overlap.

<sup>1</sup> The British Royal Academy of Engineering (2010)



### 3 Projects

#### Intelligent use of water

Feasibility studies are currently being carried out at Ardo's two Belgian factories for constructing reservoirs and a network of pipelines that will allow the cleaned waste water from our factories to be stored, and to be used at a later date by our farmers for irrigating their vegetable crops. This water, which exceeds 600 000m<sup>3</sup>, is currently discharged into rivers and is lost to the sea. If the projects receive the 'green light', The reservoirs will be designed and built in a way that will enhance the natural biodiversity of the region and provide a sanctuary for birds and other wildlife.



#### Reducing pesticide use

In 2010, Ardo's extensive pesticide screening programme (> 600 analyses) showed that all of our products tested fell within the required limits. One of Ardo's key objectives for the future is to develop crop management systems that can reduce the amount of pesticides applied and ensure that traces of residues remain close to, or below, the Limit of Detection of 0.01 ppm (parts per million). During 2011, we will established a new department within our agricultural division that will be devoted to this task.



#### Taking carbon out of the air: off-setting the carbon foot print

The vast majority of Ardo's raw materials come directly from the fields surrounding our factories. If we wish to assess the impact of our activities on the environment in terms of CO<sub>2</sub> emissions, first we must consider the effects of growing and harvesting the fresh vegetables.

The existing models for measuring carbon footprint - commonly referred to as Life Cycle Assessments (LCAs) - provide a useful method of collecting and comparing data on the agricultural inputs, such as diesel fuel used per hectare and fertiliser applied per hectare. However, current LCA models do not consider carbon sequestration, which is the carbon that is captured during photosynthesis of the growing crop and **stored in the plant tissue and in the soil**. These figures are well documented for rain forests, but are less developed in LCA models for agricultural crops, which also fail to consider the carbon that is lost from the soil.

With an appetite to learn more and a desire to understand the whole picture, **Ardo embarked on a research project, together with the University of Gent's, Department of Plant Production in the faculty of Bioscience Engineering**, to discover how much CO<sub>2</sub> is absorbed and stored by the plant during crop growth and how much is lost from the soil throughout the year.

The investigation, funded by Ardo, was enlightening. It clearly showed that the on-farm inputs: diesel, fertiliser, agro-chemicals, etc. were almost inconsequential when compared to the CO<sub>2</sub> that can be absorbed by the crop and the CO<sub>2</sub> that can be lost from the soil. It showed that reductions in the on-farm inputs, such as changing to tractors that consume less diesel, would be a step in the right direction; however their influence in the total carbon



balance is of minor importance compared to the application of good Agricultural practices (GAP). To achieve significant improvements to the carbon footprint of a given crop, farming practices such as crop rotation, cropping season and soil management - in particular soil preparation and the use of cover crops<sup>2</sup> - must be considered in order to limit the losses of CO<sub>2</sub> to air. A simpler, and possibly more effective, way to measure the carbon balance in crop production - that also considers sequestered carbon and soil carbon losses - is to monitor soil Organic Matter content (that contains around 54% Carbon). The stability, or otherwise, of the soil organic matter, measured over a period of 5 or more years, can provide a more complete picture of how the land is being farmed and how much carbon is being lost to the atmosphere<sup>3</sup>.

Ardo will continue its research into carbon sequestration and losses of carbon from the soil, and will incorporate the findings in our agricultural planning and in our advice to our farmers.



### Producing energy from vegetable waste

Construction of the Biomethanisation plants (to generate power from vegetable waste) at Ardo's two largest factories (Ardooie and Geer) is steaming ahead and the first electricity should be generated before the end of 2011.



### Biodiversity: helping our bees...

The directors of our UK Producer Organisation have each sown one hectare of a pollen mixture on their farms this year. The project, called 'Operation Pollinator' is hoped to provide the pollen and the habitat required by our bees and other pollinators, whose numbers have been in rapid decline in recent years. Most farms have some areas of land that are less productive for growing crops - either too wet or too difficult to access - and in future we will encourage our farmers to sow such areas with pollen mixtures.



### Improving transport efficiency: reducing emissions

In 2010, we achieved major reductions in 'food miles' following the consolidating of three sites in the U.K., into a single site, and with the introduction of our European Distribution Centre in Ardooie (Belgium).

We also, carried out an emission survey of the external transport companies used by Ardo. The results were pleasing, with most of our partners already operating with the cleanest, and the most recent, Euro 5 or Euro 6 standard trucks.

A major investment is planned for the 2011 harvest to replace 50 truck mounted field containers used to transport harvested vegetables from field to factory. The new lighter field containers, designed to Ardo's specifications, will have the same volume, but **weigh 500 Kg less than their predecessors, enabling a greater weight of vegetables to be carried - improving transport efficiency.**

<sup>2</sup> 'Cover crops' are sown at times of the year when the soil is usually bare. They form a blanket over the field and can produce nitrogen, reduce soil erosion and moisture loss and also reduce CO<sub>2</sub> losses to the air. Cover crops are generally ploughed in before the next crop (green manure), thus further increasing the carbon content of the soil.

<sup>3</sup> The incorporation of farm yard manure, or other forms of organic matter, should be considered when the evolution of soil organic matter level is used as an indicator of the carbon balance.





# PEOPLE

Dedicated Employees  
who 'walk the talk'



**Corporate Responsibility** means far more to Ardo than just an annual report; it is a tangible part of our business which is ingrained in our company's culture and its policy decisions.

At Ardo, our approach to Corporate Responsibility is best explained by our 'Green Ambition'. Ardo's Green Ambition is an initiative that runs through the heart of our business, where all employees are encouraged to be conscious of their actions and the effects their actions may have on others (**PEOPLE**), the items that they produce (**PRODUCTS**), or their immediate, or more distant environment (**PLANET**).

At Ardo, we recognise that the year-on-year improvements across our business rely entirely on the dedication and commitment of our employees, their willingness to come forward with their ideas, and on providing the opportunities for them to put these ideas into practice.



## Providing the optimal working environment

For Ardo, our environment has a broader meaning than nature, or the fields where our crops are grown, or the natural products that we produce, ...

... it is also the Ardo working environment, where our aim is to be green, safe and healthy, and to provide a stimulating place of work where people can thrive and develop, and where their contribution is appreciated and recognised.

### Green ideas

Many of Ardo vegetable freezing factories have set up environmental working groups that challenge their site's green credentials and work to develop new approaches which are better for the environment. Other sites have idea-boxes, providing every employee with the opportunity to put forward their suggestions. Recent examples of 'Green ideas' that have been introduced are:

- 'Car pooling' or
- 'Cycle to work day'

### Safe

Accident prevention in the workplace is of paramount importance to Ardo. Employee training is used to teach correct and safe operating procedures and to raise awareness of potential risks. Each site has a safety officer who is responsible for ensuring that plant and equipment is safe and that employees consider their own and also their colleagues' safety ahead of everything else.

In 2011, extra measures will be taken to reduce our employee injury frequency, which we did not manage to decrease in 2010. Working groups will be established, and inter-company health and safety audits will be introduced. All new installations will be inspected by an external auditor before use.





## Healthy

Our low absenteeism rate, which again decreased by 4 % during 2010, is a good barometer of the health of our organisation and our employees.

## Employee development and recognition

In 2011, we will introduce an Ardo introductory training programme for new employees. New colleagues will be walked through different areas from the field, through to the factory - seeing all the different departments - and all the way to the freezer.

All aspects of the business will be presented, including Ardo's duties as an employer, its corporate responsibilities and its reason for being, which will cover product quality and customer service. We hold annual group departmental meetings, where the heads of departments (processing, agronomy, purchasing, finance, quality, HR,...) from Ardo sites across Europe come together to share knowledge and experience and to align future strategies.

Through sharing of experience, we can identify best practices and enhance the feeling of being part of a group, where each individual, in whatever function he/she occupies feels respected and feels to be an important part of our company's development.







### Taste panels - end of season 'variety' evaluations

At the end of the production season for each crop, each Ardo site is asked to assess the merits of the different varieties that were grown. The results that focus on: **product appearance and quality, disease resistance and harvestable yield** are used to assist the varietal selection for the following year.

### New Product Development

At our production units, our Chefs and our New Product Development (NPD) specialists combine local tastes and local products to create innovative and healthy dishes.



The food experts are in turn supported by a group NPD department that draws together the ideas from across the group and from the world at large, to identify food concepts that could be attractive to our international customers. All product research involving value added items take into account the latest developments in sustainable ingredients and processes, to ensure a clean label declaration and a highly nutritious product.

### Greater focus on organic vegetables

Increasing consumer awareness is driving a growing demand for organic vegetables. Ardo has responded to this demand by drawing on all of our experience in both conventional crop production and vegetable processing to deliver frozen organic vegetables with similar quality characteristics to conventionally grown.



Throughout Europe strict legislation governs the growing of organic crops and their segregation from conventional crops through harvest, processing, packing and storage. In 2010 we increased our production of organic vegetables and expanded our organic product range with new items. We offer a range of organic products to suit all tastes and recipes, pure, carefully mixed or prepared.



## Carbon footprint of Ardo's products

Throughout Europe there has been a growing interest in the carbon footprint of food. Across the different Member States, a multitude of schemes and standards have evolved which provide templates for recording inputs and computer models for calculating the results of Carbon Life Cycle Assessments (LCAs). When the inputs required for producing Ardo's frozen vegetables are entered into these models, we see that Ardo's products compare extremely well with other foodstuffs. Frozen vegetables have an average of 0.7kg CO<sub>2</sub> emissions per kg of final product<sup>4</sup>, making them one of the food industry's lowest contributors to CO<sub>2</sub> emissions. European average CO<sub>2</sub>-equivalent per kg of different foodstuffs<sup>5</sup>:

Beef	22.1 kg CO <sub>2</sub> -equivalent per kg
Pork	7.5 kg CO <sub>2</sub> -equivalent per kg
Poultry	4.9 kg CO <sub>2</sub> -equivalent per kg
Milk	1.4 kg CO <sub>2</sub> -equivalent per kg

## Reducing packaging

In close cooperation with our packaging film suppliers, we have introduced new films with improved elasticity and tensile strength which have enabled us to reduce the thickness of our PE films by 10% without compromising strength or appearance. This action will reduce packaging waste by the equivalent of the plastic waste generated by 2 000 people.

We have achieved uniform compression strength values on our cartons, by imposing strict intake controls. By removing the variances in cardboard strength we have been able to reduce the thickness of our cartons that in turn saved 150T of paper in 2010 - equivalent to 3 million newspapers!

All of our commercial printing, including the Ardo news letter and this report, are printed on Forest Stewardship Council (FSC) paper<sup>6</sup>.



10% PE-film reduction corresponds to a plastic waste reduction of 2 000 people.

150T paper reduction corresponds to 3 million newspapers.

<sup>4</sup> PROFEL - European Association of Fruit and Vegetable Processors. Results provided by a number of companies in the absence of any published figures by international authorities or independent bodies

<sup>5</sup> Source: European Commission Joint Research Centre, Evaluation of the livestock sector's contribution to the EU greenhouse gas emission

<sup>6</sup> FSC certification is a voluntary, market based tool that supports responsible forest management worldwide.

Ardo has an ambition;  
we call it our  
**'Green Ambition'**

We set out to perform all of our activities in a conscious manner, where we:

- **Consider** the impact of each action on the environment and on the people who it may affect
- **Make decisions** with the correct motivation that Ardo can be proud of
- **Perform** our operations in a managed way, in compliance with our objectives to protect the **PLANET** and to create our **PRODUCTS** in a sustainable way with respect for **PEOPLE**



We preserve nature's precious gifts

The paper that this report is printed on is "Cocoon silk" 2-sided pressed. This paper is constructed from **100% post consumer recycled pulps and is FSC (Forest Stewardship Council) certified**. FSC certification provides assurance that wood-based products are sourced from responsibly managed, sustainable forests. During the FSC certification the origin of the product is verified together with the complete commercial chain up to the end user. The printing inks used for this report are **vegetable based-inks**. These are inks where the mineral oil fraction is replaced by vegetable oils.



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