

# Sustainability Report

Part of Stora Enso's Annual Report 2015



THE RENEWABLE MATERIALS COMPANY

# Sustainability highlights 2015

## Human rights

**ILO**

In April Stora Enso signed a unique public-private partnership agreement with the International Labour Organisation (ILO).

## Sourcing

**90%**

of Stora Enso's spending on goods, materials and services was covered by the Supplier Code of Conduct.

## Safety

**17.4**

safety observations were made per employee during the year, making it an all-time record at Stora Enso.

## Human rights

**69%**

Implementation of our human rights action plans is well underway, with 69% of actions completed.

## Forestry

**90%**

of the lands we own or manage were covered by forest certification schemes.

## Business ethics

Our grievance channel in China, India, Russia, Laos, and Brazil was made available to our external stakeholders.

## Global warming

**-32%**

Our CO<sub>2</sub> emissions per saleable tonne of pulp, paper, and board were 32% lower than the 2006 benchmark level.



Governance

People and Ethics

Forestry and Land Use

Environment and Efficiency

Data and Assurance

# Stora Enso Sustainability Report 2015

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People and Ethics

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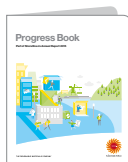
Forestry and Land Use

Environment and Efficiency

Data and Assurance

**Stora Enso's Annual Report 2015** consists of four reports: Progress Book, Financial Report, Sustainability Report and Corporate Governance Report. All are available at [storaenso.com/annualreport](http://storaenso.com/annualreport).

**The Progress Book** explains Stora Enso's strategy, how we create value, and how our work is progressing. The publication is available in English, Finnish and Swedish.



Progress Book

**The Financial Report** consists of Stora Enso in capital markets, a summary of our sustainability performance, and the audited Report of the Board of Directors and financial statements.



Financial Report

**The Sustainability Report** covers Stora Enso's sustainability performance, following the Global Reporting Initiative G4 framework.



Sustainability Report

**The Corporate Governance Report** covers Stora Enso's corporate governance policy, practices, and actions in 2015.



Corporate Governance Report



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# Strategy and governance

Stora Enso's Sustainability Policy describes our overall approach to sustainability. It focuses on areas which we have identified as priorities, and explains the integral role of sustainability in our corporate strategy.



In 2015, three Lead Areas formed a framework for our sustainability work: *People and Ethics*, *Forests and Land Use*, and *Environment and Efficiency*.

Targets and key performance indicators (KPIs) on sustainability are incorporated into group-level and division-level monthly performance reporting and periodic business reviews. Consolidated results on material sustainability indicators are reported annually in the Sustainability Report. Selected sustainability targets and KPIs are also reported quarterly in our **Interim Reviews**.

Stora Enso's Code of Conduct and other policies, guidelines, and statements related to sustainability spell out our approach to topics that are material to us, while also guiding our employees in their everyday work. These documents are available at [storaenso.com/sustainability](http://storaenso.com/sustainability).

## Sustainability governance

Sustainability is a key element of Stora Enso's corporate governance, promoted by the Board of Directors, the CEO and the Group Leadership Team (GLT). The CEO carries the ultimate responsibility for the successful implementation of our Sustainability Strategy.

The Board of Directors' Sustainability and Ethics Committee, established in 2013, oversees the implementation of our Sustainability Strategy and Ethics and Compliance Strategy. The committee met four times in 2015, and has also reviewed the disclosures in this report. The main focus areas

of the committee in 2015 are described in our **Corporate Governance Report**.

Our sustainability governance was reinforced during the year following organisational changes in 2014, when Sustainability became an independent function with its own Executive Vice President who reports directly to the CEO. This position was permanently filled in April 2015.

Everyday sustainability topics are handled by our Sustainability function together with our Legal, Human Resources, and Sourcing functions and our divisions, who are responsible for the operational management of sustainability topics. Our sustainability work is steered by the Stora Enso Sustainability Performance Network (SPN), whose members come from the group Sustainability team, divisions, and other key functions. The SPN's work involves issuing recommendations to the CEO, the Group Leadership Team, and when appropriate to the Board of Directors via its Sustainability and Ethics Committee.

The implementation of Stora Enso's sustainability agenda is the responsibility of line management supported by functional experts at all levels. Each of our business divisions has its own Head of Sustainability, who reports directly to the Executive Vice President of the division. In addition, other key units such as Wood Supply, Logistics, and Sourcing have sustainability experts of their own to support their management teams.

Since 2014 Stora Enso has focused on developing internal controls and reporting procedures for environmental, social, and

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governance topics. During 2015 sustainability was further embedded into our group-wide annual Enterprise Risk Management (ERM) assessment process, following a risk evaluation conducted in 2014. Related progress is monitored in the group’s quarterly business performance reviews.

**Sustainability governance of joint ventures**

Our joint operations in Brazil (Veracel) and Uruguay (Montes del Plata) have their own sustainability teams, and sustainability topics are regularly discussed by their boards. Our equity-accounted investment in Pakistan (Bulleh Shah Packaging) has a Sustainability Committee formed by representatives of top management and its parent companies. In 2015 Stora Enso’s Board of Directors established additional steering for joint ventures, including those controlling forest assets in Finland and Sweden.

**Reviewing the sustainability strategy**

During 2015 we continued to evaluate our current sustainability strategy, and we plan to further develop our sustainability agenda during 2016. The goal is to make our short-term and long-term ambitions clearer in our sustainability work and communications, emphasising the economic, social, and environmental impacts of our operations throughout the value chain.

**About this report**

This Sustainability Report is structured to reflect our three Sustainability Lead Areas in 2015: *People and Ethics*, *Forestry and Land Use*, and *Environment and Efficiency*. Key sustainability topics under each Lead Area are addressed through a common four-level framework:



**Opportunities and challenges**

These sections examine the external factors and global trends currently affecting our sustainability agenda. Please note that our corporate risk management assessment appears in the parallel **Progress Book** and **Financial Report**.

**Our policies**

These sections set out the relevant strategies and policies we use to address key opportunities and challenges.

**How we work**

These sections describe the processes, procedures, and systems we apply to realise our strategies and policies.

**Progress**

These sections report on our progress on related topics during 2015.

## Our sustainability targets and key performance indicators (KPIs)

	Key performance indicator (KPI)	2015	2014	Targets	Progress	
People and Ethics	<b>Human rights</b> Implementation of human rights action plans <sup>1</sup>	100% of action plans in place based on the assessments, and 69% of the actions completed	100% of human rights assessments completed	Action plans in place by the end of the second quarter of 2015 for prioritised human rights assessment findings, and for all assessment findings by the end of 2015.	Achieved ✓	
	<b>Safety</b>	Total recordable incident (TRI) rate <sup>2</sup>	11.0	12.5	8.8 by the end of 2015	Not achieved
		Lost-time accident (LTA) rate <sup>3</sup>	4.7	5.2	3.6 by the end of 2015	Not achieved
					A new target will be introduced in the group's Interim Review for Q1 2016.	In progress ✓
	<b>Sustainable leadership</b>	Leadership Index <sup>4</sup>	79	76	80 by the end of 2018	In progress ✓
	<b>Business ethics</b>	Code of Conduct Index <sup>4</sup>	79	75	Positive trend	In progress ✓
<b>Responsible sourcing</b>	% of supplier spend covered by our Supplier Code of Conduct (SCoC) <sup>5</sup>	90%	78%	90% of total supplier spend covered by SCoC by the end of 2016	Achieved ✓	
Forest and Land use	<b>Efficiency of land use</b>	Increase (%) in the volumes of fibre produced per hectare in certified tree plantations owned and managed by the company <sup>6</sup>	+3%	Baseline set	25% increase by the end of 2020	In progress ✓
	<b>Sustainable forestry</b>	% of the lands owned and managed by the company covered by forest certification schemes	90%	90% <sup>7</sup>	96% by the end of 2017	In progress ✓
Environment and Efficiency	<b>Energy</b>	Reduction in electricity and heat consumption per saleable tonne of pulp, paper, and board (kWh/tonne)	-5.7%	-3.7%	-15% from 2010 benchmark level by the end of 2020	In progress ✓
	<b>Global warming</b>	Reduction in CO <sub>2</sub> emissions per saleable tonne of pulp, paper, and board (kg/tonne)	-32%	-29%	-35% from 2006 benchmark level by the end of 2025	In progress ✓
	<b>Water</b>	Reduction in the volume of process water discharges per saleable tonne of pulp, paper, and board (m <sup>3</sup> /tonne)	-2%	-3%	-6% from 2005 benchmark level by the end of 2015 <sup>8</sup>	Not achieved
		Reduction in chemical oxygen demand (COD) per saleable tonne of pulp, paper, and board (kg/tonne)	-3%	-5%	-7% from 2007 benchmark level by the end of 2015 <sup>8</sup>	Not achieved
	<b>Materials</b>	Will be reviewed in 2016	n/a	n/a	To establish a group-wide measurement process and target on material efficiency index during 2015.	Not achieved

<sup>1</sup> Stora Enso carried out group-wide human rights assessments during 2014. Action plans to address the findings were defined during the first half of 2015.

<sup>2</sup> Number of incidents per one million hours worked. The target was revised during the first quarter of 2015. The previous TRI target was "less than 5 by the end of 2015".

<sup>3</sup> Number of lost-time accidents per one million hours worked. The target was revised during the first quarter of 2015. The previous LTA target was "less than 1 by the end of 2015".

<sup>4</sup> Measured in the annual employee survey.

<sup>5</sup> Excluding joint operations and wood supply units. The target scope for 2016 will also cover wood supply units.

<sup>6</sup> Measured as Mean Annual Increment (MAI, m<sup>3</sup>/ha/year) and calculated based on a rolling average increase (over two years) in certified tree plantations, including 50%-owned joint operations Veracel and Montes del Plata.

<sup>7</sup> Recalculated (-3%) due to changes in Veracel's reporting practice and leased area definition.

<sup>8</sup> The short-term targets for process water discharges were reviewed during the first quarter of 2015 and adapted to the existing asset base, as some mills have been left with over-scaled wastewater treatment facilities due to the closures of paper machines. The previous targets were to achieve reductions of 10%.



# Stakeholders at the core of our sustainability approach

Stakeholders have a considerable impact on our business. Their engagement is crucial for our continued success.



Stora Enso's stakeholder relations are guided by our Code of Conduct, our Business Practice Policy, our other policies on Ethics and Compliance, and our Stakeholder Guidelines. Our employees must follow these policies and guidelines when dealing with stakeholders. For details of these policies visit [storaenso.com/sustainability](http://storaenso.com/sustainability).

Our stakeholder engagement is based on both structured and flexible dialogues, as well as surveys and studies on various topics, such as customer and employee satisfaction. We also obtain important information through formal grievance channels and from trade unions.

Our products, services, and production processes are developed in collaboration with our customers and other stakeholders. Systematic collection of feedback plays an essential role in this work.

## Strengthening our sustainability work through collaboration

In 2015 we continued our work with **Save the Children**, particularly focusing on the impacts of our operations and supply chains on children's rights. Save the Children trained more than 600 Stora Enso employees on children's rights and business principles, including personnel from our joint ventures in Asia and Latin America. Our Group Leadership Team, divisional management teams, and staff from key corporate functions including Sustainability, Responsible Sourcing, and Communications also received related training.

In April Stora Enso signed a unique public-private partnership agreement with the **International Labour**

**Organisation (ILO)**. The agreement has both a global component and a component focusing on Pakistan. The global dimension aims to align our policy and practice with international labour standards, and to increase our knowledge of child labour and other labour rights. The focus in Pakistan is on promoting decent work and combatting child labour in the supply chain of our minority equity-accounted investment Bulleh Shah Packaging. For more information see [pages 18–19](#).

In 2015 we also joined the global non-profit organisation **BSR**. BSR subsequently provided support in relation to the closure of our unit in Chennai, India, and helped our operations in Guangxi, China, by reviewing their social programmes, grievance channels, implementation of human rights actions, and progress on sustainability management. BSR also assisted us by conducting a worldwide living wage study, developing a sustainability risk mapping tool, and supporting supply chain reviews. For more information see [pages 33 and 40](#).

In connection with the 2015 UN climate summit (COP 21) Stora Enso participated in the Low Carbon Technology Partnership initiative (LCTPI) of the **World Business Council for Sustainable Development (WBCSD)**. Together with other WBCSD members we outlined an ambitious action plan to combat global warming by increasing global forest cover and the use of forest products, and fast-tracking the development of the bioeconomy. The LCTPI quantified the considerable emission mitigation potential of sustainably managed forests and the wider use of forest products. The work

of our Biomaterials division on lignin application was showcased as a practical example.

Ahead of COP 21, we joined the **We Mean Business Coalition** and **The Prince of Wales's Corporate Leaders Group** by signing a pledge to combat global warming through a scientifically calculated CO<sub>2</sub> reduction target. Stora Enso was the only Finnish company to commit to the target.

### Our stakeholders

We consider anyone interested in our work as a stakeholder. Significant stakeholder groups for Stora Enso include:

- Consumers
- Customers
- Employees
- Forest-owners
- Governments
- Investors
- Local communities
- Media
- NGOs
- Partners and suppliers

### Major stakeholder concerns

#### Child labour in Bulleh Shah Packaging's supply chains

Child labour cases in the supply chains of Bulleh Shah Packaging, Stora Enso's equity-accounted investment in the Punjab province of Pakistan, continued to be a concern to our stakeholders. During 2015 we carried on taking measures to combat child labour in the operations of Bulleh Shah Packaging's direct suppliers. These measures included implementing a targeted human rights action plan, rigorous supply chain auditing and follow-up, support for educational initiatives, and partnering with the International Labour Organisation

(ILO) to promote decent work and address child labour. For more information on these actions see [pages 18–19](#).

#### Land occupation in Veracel, Brazil

During 2015 our stakeholders remained concerned by various topics regarding our 50/50 joint operation Veracel in Brazil, including land ownership and land use conflicts, landless and indigenous people's rights, local social challenges, and the environmental management of Veracel's plantations.

Veracel continued to engage in active dialogue with stakeholders, including the Government of the State of Bahia, the National Institute of Colonisation and Agrarian Reform (INCRA), and the representatives of landless people's social movements. Work continued on a Sustainable Settlement Initiative launched in 2012 to provide farming land and technical and educational support to help hundreds of local families improve their incomes.

During 2015 protests against Veracel in the cities of Eunápolis and Porto Seguro were supported by certain landless people's movements. Such actions may have arisen partly due to political and leadership issues linked to the control of the fragmented regional landless people's movement. For more information on land use in Veracel see [pages 24–26](#) and [46](#).

### Memberships in stakeholder initiatives, industry associations and advocacy organisations in 2015

- [The UN Global Compact](#)
- [The World Business Council for Sustainable Development \(WBCSD\)](#)
- [The Forests Dialogue](#)
- [WWF's New Generation Plantations Platform \(NGP\)](#)
- [WWF's Global Forest & Trade Network \(GFTN\)](#)
- [The Interlaken Group](#)
- [Transparency International's Steering Committee for the Business Principles for Countering Bribery](#)
- [The Confederation of European Paper Industries \(CEPI\)](#)
- [The Alliance for Beverage Cartons and the Environment \(ACE\)](#)
- [Euro-Graph](#)
- [European Organisation for Packaging and the Environment \(EUROPEN\)](#)
- [Pack2go Europe](#)
- [Procarton](#)
- [The UN Global Compact Nordic Network](#)
- [The Environmental Committee of the International Organisation for Standardisation \(ISO\)](#), through national member committees
- Various national industry federations and trade associations

# Product stewardship

Ensuring product safety, continuously improving the sustainability performance of our products, providing product-related environmental information, and promoting recycling schemes are key topics in our responsible product stewardship.



Stora Enso’s product portfolio includes various boards for printing and packaging, several pulp grades, wood-based products for construction, energy pellets, and paper products made from virgin fibre and recycled paper. Our safely recyclable and reusable products are based on renewable materials. We actively promote and participate in many recycling schemes.

Our final products are transported by sea, road, and rail. Transportation by sea accounted for 89% of all our product transportation by weight and distance in 2015 (86% in 2014), while road and rail transportation constituted 9% (11%) and 2% (3%) respectively.

## Ensuring product safety

Our in-house product safety and quality control systems cover our processes from product development and raw material sourcing to the delivery of the finished products. We also oblige our suppliers to comply with our product safety requirements.

Safety is especially fundamental for materials used for packaging food, toys or pharmaceuticals. All our units producing sensitive packaging materials follow Good Manufacturing Practice, a set of widely recognised guidelines also incorporated into EU regulations. All our Consumer Board mills and most of our Packaging Solutions mills are additionally certified according to recognised hygiene management standards. Food safety compliance for essential raw materials is also checked with our suppliers prior to any purchasing decision. We provide our customers

with information on products’ hygiene and safety aspects through compliance declarations.

We follow relevant legislation designed to protect public health and the environment, including the European Union’s REACH, Biocidal Products, and Classification, Labelling, and Packaging regulations, as well as trends in food contact legislation and other new demands relating to food safety. Our Consumer Board division has particularly focused on developments in Chinese hygiene standards that define how food contact materials should be produced and tested in China. When producing food contact materials we only use chemicals that have been specifically approved for that purpose, after duly checking their safety and legal compliance.

Many of our Wood Products division’s products are CE-marked to guarantee they comply with the related EU directives.

All our divisions already have or are currently establishing their own Product Safety Networks. Each mill works to ensure that their products meet relevant product safety requirements. Our units’ ISO 22000, FSSC 22000, and FDA product safety

**Safety is fundamental for materials used for packaging food.**



certificates ensure that they apply a systematic approach to food safety issues.

### Products' sustainability performance

Stora Enso's experts compile product life cycle inventories and assessments (LCIs and LCAs) on our products.

The environmental performance of all our paper products is reported in line with the voluntary Paper Profile and Paper by Nature initiatives. Our main Consumer Board products also meet the requirements of Paper Profile.

Almost 90% of our Paper division's own brands are covered by one or more recognised ecolabels, including the EU Ecolabel, the Nordic Ecolabel, and the Blue Angel (Blauer Engel). Many of our Consumer Board division's brands are also available with the EU Ecolabel. These ecolabels cover the whole life cycle of a product, including the raw materials and energy used in the manufacturing process, and the related environmental impacts.

Many Stora Enso products are also covered by forest certification labels, showing that they have been produced using wood from controlled sources, and that the entire journey of the raw material from the forest to the store shelf has been verified by an external party.

In 2015 our Wood Products division initiated audits at pellet mills in Estonia aiming to obtain Sustainable Biomass Partnership (SBP) certifications. Such certification will guarantee that the biomass used in the pellets comes from legal and sustainable sources.

Wood Products division also continued to participate in a project run by Aalto University in Finland to create a standard data collection procedure for environmental product declarations, based on European and international standards. The project was completed during 2015. At the end of the year Environmental Product Declarations became available to customers using, for instance, our sawn wood and cross-laminated-timber (CLT) products.



In 2015 our Consumer Board division has also been exploring opportunities to issue an environmental product declaration (EPD) for liquid packaging boards.

### Sharing information as a supplier

At the end of 2015 sixteen Stora Enso mills were registered in Sedex, the Supplier Ethical Data Exchange. Sedex provides a platform to share information with stakeholders on our compliance with the Ethical Trading Initiative's base code and other key sustainability topics through the supply chain. Seven of these mills are also

third-party audited according to the Sedex Members' Ethical Trading Audit (SMETA) guidelines that set standards on labour, health and safety, business ethics, and the environment, while also facilitating reporting and auditing. This allows both us and our stakeholders focus more on making improvements.



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# Human rights

Respect for human rights is a top priority for Stora Enso across our global operations. We strive to align our human rights work with the UN Guiding Principles on Business and Human Rights.



## Opportunities and challenges

### Operating in challenging environments

When it comes to human rights, Stora Enso's operations extend to challenging markets such as China, Pakistan, Laos, and Brazil. Many of the human rights challenges we face are deeply rooted in local society, and can only be effectively addressed through long-term commitment and close cooperation with global and local stakeholders.

The UN Guiding Principles emphasise that companies have an ongoing responsibility to respect human rights, even where governments and regulatory frameworks have gaps in adhering to human rights. They recommend that companies implement human rights due diligence procedures that identify, assess, and address the human rights risks and impacts of their operations, products, and services.

**Human rights risks are taken into account across our operations from investment decisions onwards.**

## Our policies

### A deep commitment to human rights

Stora Enso's human rights commitment covers our employees and on-site contractors, external suppliers of materials and services, our business partners, and communities near our operations. Our overall sustainability agenda is committed to the ten principles of the UN Global Compact, including the principles on human rights.

Relevant Stora Enso policies and statements on human rights include:

- Code of Conduct, which expresses our respect for international human and labour rights.
- Supplier Code of Conduct, which imposes strict contractual requirements on human rights on our suppliers.
- Human Rights Statement, which expresses our respect for international and regional human rights instruments including:
  - The UN International Bill of Human Rights
  - The core labour rights conventions of the International Labour Organisation (ILO)
  - ILO Convention no. 169 on the Rights of Indigenous Peoples, including the principle of Free, Prior and Informed Consent and Participation
  - The OECD's Guidelines for Multinational Enterprises
  - Children's Rights and Business Principles developed by UNICEF, the UN Global Compact, and Save the Children.

## How we work

### Due diligence on human rights

Human rights risks are taken into account across our operations from investment decisions onwards, including mergers and acquisitions. Our investment guidelines stipulate that environmental and social risks and impacts, including those related to human rights, must be duly identified, assessed, and addressed prior to any investments in projects with business critical risks. Business ethics risks and specific investments' compliance with our Code of Conduct and Business Practice Policy are also assessed.

### Environmental and social impact assessments (ESIAs)

Significant new investments can entail environmental and social impacts which may directly or indirectly cause substantial changes in local conditions, also with regard to human rights. To map and mitigate these impacts, we conduct ESIAs for all new projects that could cause significant adverse effects in local communities. Such projects include all pulp, paper, board, or sawmills built on greenfield sites, industrial-scale reforestation projects, and any large-scale expansions of existing facilities.

One important element of any ESIA involves assessing the operational context from a human rights perspective and establishing dialogues with local residents, members of local organisations, expert researchers, and other stakeholders through interviews, meetings, workshops, and public hearings. The results of ESIAs give us valuable information on how local communities will be affected by changes in their socio-economic conditions and any impacts on cultural heritage, while also setting out implications for community health, safety, and security.

### Human rights assessments and action plans

Stora Enso conducted a comprehensive group-wide series of human rights assessments in 2014, covering 93 operational entities in 22 countries, including all production, wood supply, and forestry operations, and our joint ventures in Brazil, Uruguay, and Pakistan.

**The Human Rights Assessment report**, consolidated by the Danish Institute for Human Rights (DIHR) was published in February 2015. As part of this process, Stora Enso and DIHR developed a customised Human Rights Compliance Assessment tool covering 43 human rights issues.

In countries where Stora Enso anticipated heightened human rights risks, assessments were carried out with external third-party support and site visits. In 13 units in China, Russia, Estonia, Latvia, and Poland on-site audits were conducted by Fair Working Conditions, an independent non-profit organisation for labour rights and working conditions. In Guangxi, China, DIHR conducted a comprehensive human rights risk assessment. In Pakistan an external human rights consultant facilitated an on-site assessment. Our trial

**Implementation of our human rights action plans is well underway, with 69% of them completed by the end of 2015.**

plantation in Laos was assessed by the non-profit organisation BSR.

By mid-2015, human rights action plans were defined based on the findings and recommendations of the human rights assessments conducted in 2014. The plans include group-wide actions relating to:

- Compliance monitoring of labour rights and the working conditions of third-party on-site staff
- Promoting diversity and inclusion among Stora Enso's workforce
- Improving overtime practices and entry-level wages at some units
- Developing guidance and procedures for the protection of employee privacy
- Ensuring opportunities for supporting and facilitating collective bargaining
- Improving occupational health and safety practices at some units
- Strengthening grievance mechanisms
- Improving environmental and social impact assessment procedures
- Enhancing policies and procedures for security management
- Continuing to implement our Supplier Code of Conduct
- Ensuring that all human rights impacts are considered and addressed through responsible supply chain management.

### Grievance and remediation mechanisms

In accordance with the UN Guiding Principles on Business and Human Rights and our own Human Rights Statement, Stora Enso is committed to remedy any situation where our activities have caused or contributed to adverse human rights impacts. In circumstances where human rights violations are committed by third parties with links to Stora Enso, we strive to use our influence together with relevant stakeholders to ensure that those impacts are remedied.



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A third-party-administered grievance channel is available to all our employees allowing them to report instances where their rights may have been infringed, or where they have observed violations of Stora Enso’s Code of Conduct. For more information on the group’s formal grievance mechanism, which is also open to external stakeholders, see **pages 36–37**.

We have established local grievance channels for communities and other external stakeholders in Guangxi, China, where they are encouraged to call an anonymous hotline number, write to us, visit us, or talk to our field personnel. Stora Enso’s staff are trained to distribute information about our operations in local villages, and to duly process any grievances, even in cases where a village is not in any kind of business relationship with the company. Similar local grievance channels also exist for our project in Laos and our joint operations Veracel and Montes del Plata.

**Accountability through transparent reporting**

Progress on the implementation of our human rights action plans is publicised in our quarterly **Interim Reviews**, which also cover other human rights topics such as responsible sourcing.

**Progress**

**Our achievements in human rights**

The UN Guiding Principles on Business and Human Rights encourage companies to prioritise actions designed to address impacts that are severe or can become irreparable if action is delayed. Stora Enso adopted this approach when setting action plans based on the group-wide Human Rights Assessment results. We met our target to have actions planned by the end of the



second quarter 2015 to address issues prioritised in the assessment findings. Action plans designed to address lower-priority findings were also defined by the end of the second quarter, six months ahead of schedule.

Implementation of our human rights action plans is well underway, with 69% of them completed by the end of 2015. Examples of country-specific actions that have been of special interest to our stakeholders in 2015 are described on the following pages.

**Progress on the implementation of preventive and remediation actions as of 31 Dec 2015**

	Completed	On track	Not on track	Actions requiring regular review <sup>1)</sup>
Implementation progress, % of all actions	69%	14%	12%	5%

<sup>1)</sup> Longer-term actions without a targeted end-date that require continuous review.



**Guangxi, China**

**Stora Enso's operations in Guangxi** consist of tree plantations and the construction site of a consumer board mill in the municipality of Beihai. Stora Enso owns 83% of the project, the International Finance Corporation has a 5% shareholding, and the remainder is owned by Guangxi Forestry Group Co Ltd and Beihai Forestry Investment and Development Company, two state-owned organisations. Production at the mill is scheduled to start in mid-2016. The mill is expected to employ some 270 people by the end of 2016, and the total operations will generate about 1 000 jobs in Guangxi, mainly in forestry operations. Sustainability is a prerequisite for the success of these investments.

Key issues identified in the human rights assessment for Guangxi include:

- Improving security arrangements
- Enhancing log loading and transportation
- Ensuring responsible procurement procedures related to the mill construction
- Addressing human rights issues for migrant workers in contractors' operations
- Ensuring decent living conditions for contractors' employees in forestry camps and on the mill construction site
- Managing risks related to corruption and bribery.

The 2015 action plan covers:

- Human rights training for security service providers
- The development of a Transportation Impact Management Plan
- Implementation of our Supplier Code of Conduct and Responsible Sourcing Programme
- Auditing and enforcing decent living standards in contractors' camps
- Advancing children's rights among migrant families working for Stora Enso's forestry contractors in

cooperation with the Centre for Child Rights and Corporate Social Responsibility (CCR CSR)

- Ensuring compliance with Stora Enso's anti-corruption and bribery policies and procedures in mill construction and land contracting.

In addition, we have continued to implement our major land contract correction programme in Guangxi (for more details see [pages 47–48](#)).

During 2015 the mill construction project focused on safe working conditions (for more details see [page 31](#)) and respect for the human rights of workers and local communities.

During 2015 the non-profit organisation BSR supported the implementation of a range of human rights actions in Guangxi. BSR also conducted a thorough review of each of the findings set out in DIHR's human rights risk scoping. These findings have been incorporated into our human rights action plan for Guangxi. BSR also supported the implementation of some actions, including the increased inclusion of women and minorities in community engagement processes, and assurance of Free, Prior, and Informed Consent for land contracting and contract management procedures. We also worked with the Netherlands Centre for Indigenous Peoples on these issues. For more information see [pages 22–23](#).



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### Pakistan

Stora Enso has a 35% shareholding in **Bulleh Shah Packaging** (Private) Limited in Pakistan, which we own together with the Pakistani company Packages Limited. The joint venture was formed in 2013. Bulleh Shah is Pakistan’s largest fibre-based packaging producer, and the country’s only liquid packaging board producer. The company’s offices and production facilities are located in Lahore, Karachi, and Kasur in Punjab Province.

The action plan developed in 2015 for Bulleh Shah Packaging (BSP) is based on key issues identified in the related human rights assessment:

- Child labour in supply chains
- Human rights training for security service providers
- Grievance mechanisms
- Training regarding workplace harassment and discrimination
- Implementation of BSP’s Supplier Sustainability Requirements
- Reviews of contractors’ wages and working conditions.

During 2015 we made progress on actions initiated to address these needs and we are on track to complete them during 2016.

The root causes of child labour and other human rights violations in Pakistan include widespread poverty, the lack of formal employment opportunities, ineffective law enforcement, and a lack of awareness of human rights. Bulleh Shah Packaging does not employ children in its own operations and does not accept child labour in its suppliers’ operations. BSP has put processes in place to identify and mitigate child labour in the operations of its direct suppliers. By the end of 2015 all of Bulleh Shah Packaging’s direct fibre and agricultural by-product suppliers and 99% of all direct suppliers in the country had signed BSP’s Supplier Sustainability Requirements.

### Bulleh Shah Packaging’s direct suppliers of domestic fibre and agricultural by-products

	31 Dec 2015	31 Dec 2014
Number of direct active suppliers <sup>1</sup>	335	143
Annual audit coverage (%) <sup>2</sup>	45%	87%

<sup>1</sup> As of 1 January 2015, the definition of active suppliers was changed to cover all suppliers Bulleh Shah Packaging had financial transactions with during 2014. Together with the addition of new suppliers, this increased the number of suppliers in the active supplier base in 2015.

<sup>2</sup> The share of direct suppliers of old corrugated cardboard (OCC) and agricultural by-products that are audited during the calendar year. Excluding institutional OCC suppliers identified as low risk.

During 2015 BSP’s audit team conducted a total of 395 supplier audits (267 during 2014). Out of all the audits 293 (169) were audits of suppliers of recycled paper products (old corrugated cardboard) and agricultural by-products, mainly consisting of wheat straw and corn stalks (169), including 20 follow-up audits in 2015. The company also audits second tier sub-suppliers of agricultural by-products. Out of all the audits of agricultural by-product suppliers 123 (44) were audits of sub-suppliers.

In addition to the audits conducted by BSP’s in-house audit team, the external assurance provider SGS realised 30 further third-party audits during 2015 (21).

During 2015 seventeen cases of child labour or young workers employed in contravention of ILO conventions were confirmed in the operations of BSP’s suppliers of wheat straw, corn stalk, spare parts and waste paper (13 during 2014). Eleven cases (12) were identified in BSP’s own audits and six cases (1) in the audits by SGS. Child labour is unacceptable for Stora Enso and BSP. The hiring of children violates suppliers’ contractual obligations under BSP’s Supplier Sustainability Requirements. These suppliers were immediately instructed to take corrective action in accordance with BSP’s Child Labour Remediation Policy. The policy requires suppliers to find a long-term solution for the child and the family in the best interest of the child, including facilitating access to school.

All of the suppliers involved in these cases were re-audited within two months, and as a result, one supplier contract was terminated.

#### Public-private partnership with ILO

In April 2015 Stora Enso signed a public-private partnership with the International Labour Organisation (ILO) to strengthen Stora Enso’s global policy, to promote decent work, and to combat child labour in the supply chain of Bulleh Shah Packaging in Pakistan.

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### Decent work for all

“Employers have a unique role in assuring labour rights in supply chains,” says **Benjamin Smith** from the International Labour Organisation (ILO). Stora Enso has signed a unique partnership with the ILO to find new ways to promote decent work globally and to combat child labour in Pakistan.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)



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Although Bulleh Shah Packaging rigorously audits its direct business partners and second-tier biomass sub-suppliers, child labour continues to be a problem in the communities where BSP sources raw materials. As this issue cannot be addressed solely through auditing, BSP has resolved to adopt a more comprehensive approach through the ILO partnership. The ILO will support BSP's efforts to systematically address the issue of child labour through research into root causes, community-level awareness-raising measures, and capacity building among suppliers, families and young workers, aiming to combat child labour and promote decent work. For more information about our responsible sourcing and community engagement work see [pages 38–41](#) and [21–29](#) respectively.

In 2015 Stora Enso, Bulleh Shah Packaging and ILO launched the collaboration by agreeing to commission formative research using ILO methodology to examine labour practices in local supply chains within the communities where BSP sources goods and services. This research particularly aims to investigate the extent of child labour in the urban informal waste paper recycling sector and in the rural communities that supply agricultural by-products to the paper and board industry. In early 2016 the collaboration parties will meet to agree on next actions.

In 2015, BSP also commissioned a study from independent consultants on child labour within the agriculture sector around BSP's biomass collection centers in Pakistan. The key results of the study confirm that child labour is very prevalent in the areas around BSP's biomass collection centers due to high poverty levels; parents' illiteracy and lack of off-farm work skills; parents being indebted to landlords resulting in bonded labour for families; hereditary labour relationships; and lack of interventions that could prevent exploitation.

Although the study did not determine that the families interviewed work in Bulleh Shah Packaging's supply chains, Stora Enso considers it likely, as the study substantiates the findings of the 2014 [human rights assessments](#). According to the assessments, there is potential that bonded labour exists in BSP's agricultural supply chains.

Stora Enso will seek to address these findings through the Public-Private Partnership with the ILO; one of the objectives of the partnership is to look into the root causes of child labour in BSP's supply chain. The ILO will carry out formative field research in 2016 that will further map and investigate the issue in order to design and implement mitigation interventions. Stora Enso will consult with the ILO to determine how

the findings of this study can support ILO's formative research under the partnership.

**Veracel, Brazil**

**Veracel**, our 50/50 joint operation with the Brazilian company Fibria, runs a state-of-the-art pulp mill and eucalyptus plantations in southern Bahia, Brazil. Veracel's community engagement work focuses on land ownership and land use, and local social development. Veracel's large-scale land ownership and the consequent rises in land prices have been a major concern among some stakeholders. We strive to engage actively with local stakeholders, to be an active member of local communities, and to help to address these challenges.

The human rights assessment findings for Veracel particularly recommended:

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**Investing in children's rights**

"Companies impact children's lives in many ways," says **Sanna Vesikansa**, Advocacy and Policy Adviser at Save the Children Finland. "It is vital that they respect the rights of those who cannot fend for themselves." Stora Enso has been working with Save the Children since July 2014 to make children's rights a more integrated part of our strategy and operations. Save the Children has been a "critical friend", giving honest feedback on various Stora Enso policies and making recommendations on how to improve them.

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- Further monitoring of compliance with our Supplier Code of Conduct
- Human rights training for security personnel
- Improvements in the monitoring of on-site contractors
- Measures to address landless movements' claims and counterclaims related to land rights
- Steps to increase awareness of Veracel's formal grievance mechanism in local communities.

To address these findings, Veracel has commenced implementation of a human rights action plan that involves restructuring and realising a programme to monitor on-site contractors; initiating human rights training for security staff; continuing to implement Veracel's Code of Conduct for suppliers; improving grievance mechanisms; and continuing to implement a Sustainable Settlements Initiative for land disputes.

Veracel has been criticised in the past on issues related to landless people's social movements and the rights of indigenous peoples. For more information on Veracel's human rights work and engagement with indigenous communities see [pages 24–26](#).

Veracel maintains good relations with the 22 Pataxó and three Tupinambás communities located around its operations, and supports programmes designed to strengthen their cultural identity. Local indigenous communities are currently calling for the expansion of the Barra Velha Indian Reserve. The reserve's extension would encompass hundreds of land properties, including 3 219 hectares of land acquired by Veracel before the indigenous peoples first made claim to the land. This case is currently being processed in the regional federal court, and Veracel is committed to fully comply with the court's decision.

**Laos**

In Laos, Stora Enso is continuing to develop a trial plantation encompassing 3 900 hectares of plantations,

of which 2 332 are planted with eucalyptus. Stora Enso Laos has approximately 140 employees.

The main findings of the human rights assessment in Laos identified the need to:

- Formalise local hire contracts to prevent discrimination and the employment of underage workers
- Create new internal and external grievance mechanisms
- Improve land leasing procedures
- Enhance stakeholder engagement to ensure informed community consultation and participation, including Free, Prior, and Informed Consent where applicable
- Enhance safety practices
- Ensure that workers receive a living wage.

To address these findings Stora Enso Laos signed an advisory services agreement in 2015 with the

International Finance Corporation (IFC), a member of the World Bank Group. This enables the IFC to assist our operations in stakeholder identification and land licensing processes, so as to improve land management and community consultation, and ensure that local communities' Free, Prior and Informed Consent is duly obtained where applicable.

We also responded to the assessment's findings by launching a new formal corporate grievance channel, accessible to our own employees and to external stakeholders, and by initiating the development of an additional local grievance mechanism. We additionally worked with BSR to calculate living wage levels to ensure that our workers in Laos receive adequate salaries (for more details see [page 33](#)). Further actions designed to address the human rights assessment findings will be completed in 2016.





# Community engagement

Our mills and forestry operations are often located near rural communities that form one of our most important stakeholder groups. We aim to increase Stora Enso's competitiveness while at the same time promoting economic, environmental, and social improvements in these communities and along our value chain.



## Opportunities and challenges

### Partnering with local communities

We are a major employer, tax-payer, and partner for local entrepreneurs in many localities. To ensure that our production, raw material sourcing, and labour supply are both sustainable and competitive, it is crucial that the rural communities which we depend on thrive economically, socially, and environmentally.

Our mills are heavily dependent on energy and raw materials, and they generate emissions that may impact adjoining communities. Our tree plantations in China, Brazil, and Uruguay influence local land use, livelihoods, and ecosystems. Our socio-environmental impacts must be managed responsibly, in order to maximise their positive influence, maintain cooperative community relations, and ensure our long-term license to operate.

In Finland and Sweden, where our presence is particularly significant, we operate as part of vital regional forest clusters. Procuring wood as raw material for our mills also creates value for everyone within these clusters, including forest-owners, wood supply intermediaries, local entrepreneurs, and logistics providers. In Continental Europe, where paper for recycling (PfR) is an important raw material for our mills, we strive to create value by working in partnership with PfR suppliers, the public sector, and non-governmental organisations who promote recycling.

Restructuring and closing down operations creates problems not only for our employees, but often also for the affected communities as a whole. Responsible restructuring practices can support these communities through the related changes and create opportunities for new business initiatives.

**Our policies**

**A comprehensive approach to community engagement**

Relevant policies that guide our community relations include:

- Code of Conduct
- Social Responsibility Guidelines
- Stakeholder Guidelines
- Human Rights Statement
- Tax Policy.

Our joint ventures have developed or are in the process of developing formal procedures for their community engagement work.



**How we work**

**Managing social and environmental impacts**

In response to the potential impacts that our activities may have on neighbouring communities, our operations have implemented various precautionary management actions. These include:

- Environmental and social impact assessments (ESIAs) conducted for all new projects that could cause significant adverse effects in local communities. Such projects include all greenfield pulp, paper, or board mills, large greenfield sawmills, industrial-scale reforestation projects, and any large-scale expansions of existing facilities. For more information see [page 15](#).
- Due diligence assessments which are invariably realised as part of Stora Enso’s acquisition and investment processes. Conducted prior to any investment decision, these assessments cover relevant factors related to environmental, social, and business practice issues. They play an important role in building our understanding of local operating environments, while also helping us to build constructive relationships with stakeholders such as governments, business partners, local communities, and NGOs. Any subsequent investment decision must take due account of our ability to mitigate and manage any identified adverse impacts.
- Applying environmental management systems such as ISO 14001 for our production units
- Sustainable forest management certification of our own forestry operations and suppliers
- Investments in capacity building and local sourcing, local nature conservation, agroforestry programmes, and socio-economic development projects in local communities
- Restructuring processes planned in cooperation with the authorities.

**Progress**

**Focus on communities in growth markets**

Stora Enso’s operations generate value for governments and communities around the world through the taxes we pay. In 2015 Stora Enso paid more than EUR 1 billion to the public sector including EUR 792 million in collected taxes. For more information about our tax policy, our tax footprint, and the wider economic impact of taxes see our [Progress Book](#).

During 2015 we engaged with the communities around our operations through community events, public hearings, round tables, and open house events at our units (for more details of our stakeholder engagement work see [pages 9–10](#)). Our community investment work has particularly focused on locations outside Europe where Stora Enso or our joint ventures have operations. Below we report on progress in the locations that have most interested our stakeholders in 2015.

**Guangxi, China**

Engagement with local stakeholders is a key element of our everyday field operations. Our field staff and social engagement officers speak regularly with members of communities in the vicinity of our plantations and mill site, to inform them about Stora Enso’s operations and to enable them to express their concerns and contribute ideas.

We strive to ensure that our work promotes gender inclusivity, and that less vocal villagers are also consulted. During 2015 we continued to work with the Netherlands Centre for Indigenous Peoples in Guangxi to assess and improve the process of community consultation, including Free, Prior, and Informed Consent where applicable. For more information about our work on human rights and indigenous communities see [pages 14–20](#).

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During 2015 we further enhanced our structured and systematic community engagement work in Guangxi. Work began on the creation of an ISO 26000 social responsibility management system, in cooperation with the non-profit organisation BSR. We aim to implement the new system in 2016.

We have also continued to support local villages around our plantations through our Community Development Fund. In 2015 we improved the community development funding application process by making it more streamlined and transparent. Funding amounting to EUR 132 000 (EUR 164 000 in 2014) was allocated to a total of 62 projects in 59 villages across Guangxi (92 projects in 67 villages), including the development of infrastructure, sanitation facilities, and support for schools.

For 2016 our target is to further develop pre-investment screening mechanisms, including impact analysis, to better determine the impacts of our investments on local communities and on the company.

#### Resettlement Action Plan

As a result of local industrial development in the Tieshangang Industrial Zone, approximately 6 000 people have been relocated from their previous homes to nearby locations, with new housing and compensation offered by the authorities. Of these people, 1 236 were displaced from Stora Enso's mill construction site. Including people relocated from adjoining areas acquired by the authorities for road-building, this number rises to 1 530 people classified as Relocated People. In addition to supporting these Relocated People, Stora Enso also supports and monitors the wellbeing of people who have lost part of their land and are left with less than 0.3 mus of land (a "mu" is a local unit of area equal to 0.02 hectares). This means we are helping a total of 2 332 people classed as Affected People, including the Relocated People.

## Stora Enso and Kemira carried out pilot projects in Guangxi to address local water concerns.

Stora Enso has also calculated a wider figure for Impacted People, which includes people who have lost part of their land but still possess more than 0.3 mus of land. The total number of Impacted People is 7 670. Although Stora Enso is not directly involved in the relocation process, we have maintained a continuous dialogue with the people most affected, and offered them support through a Resettlement Action Plan (RAP) that aims to help them improve their livelihoods.

This plan has been implemented together with the local authorities and the Beihai Civil Volunteer Association. The RAP has three main focuses:

- Education of local children and young people, including financial support for a nursery school and the education of schoolchildren and students aged 6–21
- Helping people to improve their livelihoods by providing job training, hiring locally, and supporting local business development
- Supporting the Relocated People with land tenure related documentation.

#### Responsible water stewardship

Stora Enso and the chemicals company Kemira ran a joint project in Guangxi in 2013–2015 to promote responsible water management through community

	2015	2014
<b>Guangxi in numbers</b>		
Stora Enso's operations in Guangxi consist of local tree plantations and a consumer board mill currently under construction in the municipality of Beihai. Production at the mill is scheduled to start in mid-2016.		
<b>Direct employment</b>		
Stora Enso employees	1 176	1 122
Total remuneration for Stora Enso employees (EUR million)	31.9	23.1
Lost-time accident rate for Stora Enso employees <sup>1</sup>	2.0	1.7
<b>Contractor management in forestry operations</b>		
Number of contractors	121	138
Number of contractor employees <sup>2</sup>	2 499	1 562
Lost-time accident rate for contractor workers in forestry operations <sup>3</sup>	4.8	9.8
<b>Contractor management in mill construction</b>		
Number of contractors	22	26
Contractor employees <sup>4</sup>	5 801	490
Lost-time accidents affecting contractor workers in mill construction	0	0
<b>Community engagement</b>		
Investment in social programmes (EUR million)	0.8	0.5
<small><sup>1</sup> Number of lost-time accidents per one million hours worked.</small>		
<small><sup>2</sup> Working hours estimates converted to full-time equivalents. Forestry contractors' employees worked an estimated 4 917 065 hours during 2015.</small>		
<small><sup>3</sup> Number of accidents per one million hours worked based on the working hours estimate.</small>		
<small><sup>4</sup> Working hours estimates converted to full-time equivalents. Contractors' employees worked an estimated 11 416 295 hours during 2015.</small>		

engagement. This project aimed to find new solutions for responsible water management through stakeholder surveys, community work, and related capacity building. The project brought together Kemira's wide-ranging knowhow on water chemistry, Stora Enso's expertise on tree plantation management, and local communities' practical knowledge and experiences related to water issues in Guangxi.

Based on the project's baseline study carried out in 2014, Stora Enso and Kemira launched pilot projects in local villages to address specific concerns such as



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sewage treatment, drinking water supply, livelihood support, irrigation water supply, and community water plant management. Three villages in different locations and geographical conditions, Nahupo, Shengping, and Baimei, were chosen as project sites.

Construction of water management solutions, including pipes and artificial wetlands, began in April 2015. During the six-month construction phase, a total of 12.7 kilometres of water and sewage piping were laid, three artificial wetlands were created, three water storage tanks were built, and Shengping’s water supply facilities were remodelled. The pilot projects have benefited nearly 2 600 villagers. Altogether 43 local people were employed by the projects, generating a total income of EUR 60 000.

Training on the optimal use of the new facilities and equipment was provided during June–September. Additional training on the efficient use of village water resources was also provided. The goal is to help the villagers initiate and maintain new, long-term sources of income.

In addition to the pilot projects, Stora Enso organised water testing and monitoring events in the region to raise awareness of factors affecting water quality.

For more information see the project’s [website](#).

### Veracel, Brazil

During 2015 **Veracel** continued to engage in dialogue with the Government of the State of Bahia, the National Institute of Colonisation and Agrarian Reform (INCRA), and the representatives of landless people’s social movements including:

- The Movement of Landless Workers (MST)
- The Federation of Agricultural Workers (Fetag)
- The Movement for the Struggle for Land (MLT)
- The Peasant Resistance Movement (MRC)
- The Front of Free Workers (FTL)
- The Association Unidos Venceremos (Aprunve).

Work continued on a related Sustainable Settlement Initiative launched in 2012 to provide farming land and technical and educational support to help hundreds of local families improve their incomes. This initiative is facilitated by the Government of the State of Bahia through the Secretariat of Rural Development (SDR), and conducted in cooperation with landless people’s social movements and the INCRA.

Through this initiative the social movements have pledged to leave areas occupied since July 2011, while Veracel has agreed not to seek to repossess areas occupied before that date. The initiative relates to a total of 16 500 hectares of Veracel’s lands designated for the settlements, including 14 000 hectares covered by the recent negotiations and 2 500 hectares covered by an earlier agreement with MST. In terms of the number of people assisted and its geographical scope this will be the most significant land reform project realised in Brazil over the last 25 years.

**Veracel in numbers**

Veracel, our 50/50 joint operation company with the Brazilian company Fibria, runs a state-of-the-art pulp mill and eucalyptus plantations in southern Bahia, Brazil. Veracel owns 216 000 hectares of land, of which approximately half is dedicated to rainforest preservation, and leases 12 000 hectares of land.

	2015	2014
<b>Employment</b>		
Veracel’s own employees	700	692
Contractors’ employees	2 244	2 212
<b>Remuneration, Veracel employees (EUR million)</b>	14	15
<b>Tax payments (EUR million)<sup>1</sup></b>	22	27
<b>Local sourcing (EUR million)<sup>2</sup></b>	143	142
<b>Agroforestry activities</b>		
Partner farmers in the Forest Producer Programme	93	87
Partner farmers with certified tree plantations	79	83
Honey producers on the company’s land	128	171

<sup>1</sup> Including federal, state, and municipal taxes and pension and social security payments.  
<sup>2</sup> Sourcing from suppliers in the state of Bahia.

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### A family farm affair

The Roça do Povo (“The People’s Farmlands”) project began in 2008 as an effort to boost the growing and further processing of cassava, and to increase the incomes of farming families living near Veracel’s plantations. Today the project has grown considerably from its initial scale, and created jobs for about 500 people, making farming the most important source of income in the community.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)





Compensation for the land transfers will be paid to Veracel by INCRA in line with Brazilian legislation. During the second quarter of 2015 the Agricultural College of the University of São Paulo completed an assessment of the areas where the sustainable settlements would be established. This assessment also included studies of regional markets for agricultural products, with the aim of ensuring that in the future, farming livelihoods will be economically, environmentally, and socially sustainable for settlement residents.

At the end of 2015, additional areas of Veracel's land totaling 5 461 hectares (2 219 hectares at the end of 2014) were occupied by landless people's movements not involved in the Sustainable Settlement Initiative. The repossession of these areas is being sought through legal processes. The occupied area increased during the first quarter of 2015 mainly due to new occupations

by the Federation of Family Agriculture Workers (FETRAF). Stora Enso also reports on this additional occupied area in the sustainability section of the group's **Interim Reviews**.

**Supporting family farming**

In 2012 Veracel launched a major initiative together with the state government, known as the Pact for the Development of the Discovery Coast. Under this agreement the government has committed to reimburse Veracel ICMS tax credits paid by the company between 2011 and 2015, in return for a commitment made to invest in local development programmes.

With investments of EUR 135 000 in 2015 (EUR 24 000 in 2014 and EUR 319 000 in 2013), the pact is benefitting family farmers in several communities near Veracel. The Pact's projects contribute to the sustainable development

of family farming by forming associations for small producers and indigenous communities.

Veracel also enables local beekeepers to keep their hives on the company's land and supports local honey production financially. In 2015, a total of 128 honey producers, mostly working through local cooperatives, benefitted from this support, producing a total of more than 132 tonnes of honey and 0.2 tonnes of pollen.

The Agrovida family farming programme was launched in 2009 as a pilot project in the community of Ponto Central in the municipality of Santa Cruz Cabralia. The project aims to produce food for the community and to trade surplus production in regional markets, especially for use in school lunches and municipal institutions.

To scale up this programme, Veracel has proposed a new participatory concept, where areas of Veracel's land are contractually assigned to each neighbourhood association. Veracel additionally provides knowhow on how intercropping enables other crops such as cassava, beans, corn, and squash to be grown together with eucalyptus trees. This initiative has been developed together with the regional Forest Dialogue, which brings local stakeholders together to discuss topics related to forestry. By the end of 2015 the Agrovida initiative involved 71 farmers cultivating 102 hectares.

**Addressing social issues among young people**

In 2013 Veracel began cooperation with the NGO Instituto Mãe Terra on a project designed to train local young people to act as agents for local development in their communities. The project will help them to network and gain support from partners and public policies. The training has covered topics such as citizenship, human rights, education, environment, community development, drugs, violence, sexuality, family issues, and information technology.

Most of these young people have also been trained to participate as volunteers in the Monitoring Network for Transport, which maps the needs of communities



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regarding local investment opportunities that could improve local infrastructure.

Since 2013, Stora Enso and Veracel have been working together with the NGO Childhood to combat child abuse and exploitation in nearby municipalities. This cooperation, also involving the NGO Tribo Jovens, has become part of the wider Territory of Protection Programme, which is facilitated by Veracel. The programme brings together government initiatives, private companies, and civil society projects aiming to promote and defend the human rights of children and adolescents.

In 2014 and 2015 the programme was extended to the tourism sector, as especially during the carnival season many tourists visit the city of Porto Seguro, 50 kilometres from Veracel Mill. During 2015 the training of professionals continued, and a new Steering Committee to Combat Sexual Violence was created to bring together representatives from the departments of Social Welfare, Education, and Health, and various other local stakeholders.

*Engaging with indigenous communities*

Veracel continues to engage actively with the area's indigenous Pataxó and Tupinambás communities,

while also working closely with the NGO Tribo Jovens to improve the conditions of indigenous people. This cooperation programme has been fostering social, economic, and environmental development since 2006.

**Montes del Plata, Uruguay**

**Montes del Plata**, a 50/50 joint operation between Stora Enso and the Chilean company Arauco, runs a state-of-the art 1.3 million tonne pulp mill at Punta Pereira in Colonia, southwestern Uruguay, together with associated eucalyptus plantations. During its first year of full operations in 2015 Montes del Plata continued strategic, long-term efforts to develop the local workforce and local communities.

*Social investment in housing, roads, and water treatment*

During 2015 the local authorities of Colonia Department continued to assign almost 100 housing units donated by Montes del Plata to local families in need. The housing units, which had been constructed for workers during the industrial complex construction, have been sold by the authorities to families who pay for them in small instalments. The resulting payments have been used to create a local fund for future housing plans

and to rehouse 50 families from a local shantytown that was affected by floods. More than 400 families applied for the Colonia houses. 279 were selected in accordance with social conditions established by the local authorities, and 99 houses were allocated through a lottery.

During 2015 Montes del Plata also made progress on the construction of 30 houses in the nearby town of Carmelo as part of a commitment agreed with the Ministry of Housing, Land Planning, and Environment, to provide homes for needy families. Some 80% of the housing project is now ready.

Montes del Plata and the Uruguayan water authority signed an agreement to realise three infrastructural developments in Colonia: wastewater treatment plants in the communities of Colonia del Sacramento and Conchillas, and a drinking water purification plant to supply Conchillas and nearby towns. All three projects have been advancing, with financing from Montes del Plata.

During 2015 Montes del Plata collaborated with the national roads authority on the maintenance of a section of National Route N°55. Montes del Plata has also implemented improvements along the same road under an agreement with the national environmental authority, including better pavements, speed-reducers, new road lighting, and traffic lights.

Furniture earlier used in construction workers' lodging centres has meanwhile been passed on to Uruguayan organisations for donation to needy families.

*Active stakeholder dialogues and grievance mechanisms*

Montes del Plata maintains active dialogues with local communities and other stakeholders through various channels, including face-to-face meetings and communications disseminated via the national, regional, and local media.

The Good Neighbour Programme aims to ensure that communities in areas affected by forestry operations

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**Stora Enso awarded for social responsibility in Brazil**

In May 2015, Stora Enso received a prestigious responsibility award in the Brazilian Congress for our social responsibility actions in Bahia, Brazil. The Premio Neide Castanha Award was granted to an initiative that combats child exploitation.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)





become better acquainted with Montes del Plata and its activities, and form a positive relationship with the company. This encourages them to approach the company with any possible concerns or complaints.

The anonymous Ethics Channel complaint mechanism on the company's website enables stakeholders to bring up topics related to Montes del Plata's Code of Ethics and Conduct. This channel has been well publicised and is available to our



joint operation's own employees, the employees' of contractors and suppliers, and members of local communities. All submitted claims are handled by Montes del Plata's Ethics Committee, and anyone submitting claims may track them online using a specific code.

Montes del Plata has also continued working on initiatives designed to improve local conditions in the community around the pulp mill. In 2015 the company restored an area formerly used for the storage of dredging material, converting it into a 14-hectare public park. The company has also collaborated actively with other community projects, such as the El Palenque Native Society Project, which aims to improve local recreational developments. During 2015 Montes del Plata and the Colonia government also supported a project enabling local residents and schoolchildren to choose official names for their local streets.

Montes del Plata runs the Bioparque M'Bopicuá, which includes a visitor centre and 150 hectares of land used to breed endangered species and other animals for eventual return to their wild natural habitats. The centre promotes environmental education, enabling visitors to experience native wildlife at first hand, and learn how ecosystems function. The biopark welcomed more than 1 600 visitors in 2015.

**Productive integration**

As part of its vision of sustainable growth Montes del Plata has continued to create strategic alliances with local rural producers. More than 300 producers have enabled forestry plantations on their lands to be leased and managed by Montes del Plata. For more details about this cooperation and the related Alianzas programme see [page 47](#).

**Positive impacts through employment**

Montes del Plata seeks to create positive impacts in local communities by fostering employment

opportunities, maximising local hiring, developing databases to connect local job-seekers with other companies, and promoting further education and an entrepreneurial spirit among local youngsters.

Montes del Plata is also involved in long-term actions designed to support primary schools and high schools in neighbouring municipalities, and encourage young people to continue their education. These initiatives include mill visits and face-to-face talks with professionals from various sectors. Montes del Plata also participates in various collaborative schemes designed to promote entrepreneurship and science among local young people.

**Focusing on road safety**

During 2015 Montes del Plata continued to mitigate the potential negative impacts of mill and forestry operations

**Montes del Plata in numbers**

Montes del Plata, our 50/50 joint operation with the Chilean company Arauco, runs a state-of-the art 1.3 million tonne pulp mill at Punta Pereira in southwestern Uruguay, together with associated eucalyptus plantations. The pulp mill started production in 2014. Montes del Plata owns 190 000 hectares of land and leases 46 000 hectares of land.

	2015	2014
<b>Employment</b>		
Montes del Plata's own employees	668	661
Contractors' employees	3 137	2 590
<b>Number of local suppliers<sup>1</sup></b>	188	242 <sup>2</sup>
<b>Agroforestry activities</b>		
Partner farmers in the Forest Producer Programme	308	258
Honey producers on the company's land	31	26
Cattle farmers on the company's land	180	177
Hectares of company land used for cattle grazing	135 386	139 119
<b>Social programmes</b>		
Investment in social programmes (EUR million)	0.4	0.4

<sup>1</sup> Local suppliers in the Department of Colonia, where Montes del Plata Mill is situated.

<sup>2</sup> Restated due to reporting errors.

and wood transportation by running road safety and community health programmes.

Since 2014 Montes del Plata has been developing a strategy for long-term sustainable transport, and a comprehensive action plan involving forest drivers, transport companies, and local communities. Montes del Plata carefully trains all drivers before they start to work for the company, with high quality support from the Roadway Safety and Education Institute. Quarterly workshops are organised for the approximately 700 truck drivers, and regular meetings are held with the owners of the transport companies serving Montes del



Plata to follow up on safety indicators and emphasise the need for permanent improvement.

The company’s transport system involves the constant satellite tracking of the fleet to ensure drivers’ compliance regarding routes, speed limits, and mandatory rests. This allows Montes del Plata to sanction non-compliers and identify best-performers.

The methodology for identifying vulnerable locations has been developed to help address the main impacts of traffic generated by Montes del Plata. Based on these findings, the company has run workshops in selected communities to build awareness of traffic safety issues.

The Ethos group – addressing the mill’s local impacts  
A working group named Ethos, composed of the mill manager, the production manager, the mill’s environment manager, and the social sustainability team, meets periodically to improve the management of odour and noise impacts that affect localities near the mill. Their approach encourages everyone in the surrounding communities to help the company by using their ears and noses to facilitate the early detection of any problems at the mill.

**Bulleh Shah Packaging, Pakistan**

**Bulleh Shah Packaging (BSP)** sources various raw materials, such as fibre, chemicals, fillers, and agricultural by-products, mostly from Pakistani markets. The domestic fibre used for packaging production consists of recycled paper and board, and agricultural by-products such as wheat straw. The recycled paper and board is largely sourced from post-consumer sources, i.e. vendors who procure it from suppliers, who in turn typically source it from shops and households. Wheat straw is an agricultural by-product of wheat farming sourced from vendors, who collect it from farms.

For BSP, ensuring responsible supply chain management in the sourcing of domestic fibre and agricultural by-products is a top priority, not least because

human rights violations including child labour are prevalent in the agricultural sector in Pakistan, and also exist in the recycled fibre collection in urban areas. This has also been seen as a major concern by our stakeholders.

As a part of Stora Enso’s ILO partnership in Pakistan, preparations for the launch of a formative community study to examine labour practices were made in late 2015. The study particularly focuses on child labour in the urban informal waste paper recycling sector and in the rural communities that supply biomass to the paper and board industry. For more information about the ILO partnership see **pages 18–19**.

Stora Enso supports six schools in cooperation with the Pakistani non-governmental organisation Idara-e-Taleem-o-Aagahi. By the end of 2015, all of the 640 children previously identified as child workers were attending the schools. The children are enabled to attend school for up to eight years. We are also working to improve the marketable abilities and life skills of local parents and young workers.

**Bulleh Shah Packaging in numbers**

Stora Enso has a 35% shareholding in Bulleh Shah Packaging (Private) Limited, which we own together with the Pakistani company Packages Limited. Bulleh Shah Packaging is Pakistan’s largest fibre-based packaging producer, and the country’s only liquid packaging board producer. The company’s operations are located in Lahore, Karachi, and Kasur in Punjab Province.

	2015	2014
<b>Employment</b>		
Bulleh Shah Packaging employees	1 121	1 102
Contractors’ employees <sup>1</sup>	2 005	1 999
<b>School support initiative</b>		
Number of children in school programme	640	125
Number of schools	6	2

<sup>1</sup> Contractors’ employees working on-site at the production facilities in Kasur and Karachi, and at the collection sites for agricultural by-products.



## Stora Enso is supporting six schools in Pakistan.

Bulleh Shah Packaging runs a maternity and child healthcare clinic near its mill in Kasur. The clinic serves women and children in the surrounding communities with an annual budget of about EUR 12 000.

Other community engagement actions taken in 2015 included preparations for launching a mobile health care clinic in 2016 in collaboration with Yunus Center at AIT (Asian Institute of Technology) and Shalimar Hospital to provide basic services to local communities.

### Laos

In Laos, Stora Enso has continued to develop a trial plantation concept that combines tree-growing with food production. The company's trial plantations encompass 3 900 hectares of plantations, of which 2 332 are planted with eucalyptus. Stora Enso Laos has approximately 140 employees.

In Laos, our focus is on supporting the communities who work with us. Our technical staff make regular visits to partner communities to establish and maintain open dialogues with villagers. The company also organises excursions that enable farmers to meet and visit other farmers, discuss local issues, and exchange their ideas and experiences in relation to the agroforestry model we are promoting in Laos. This engagement also enables farmers to bring up their concerns directly with the company. For more details of our agroforestry model in Laos, see [page 46](#).

As part of the related land compensation scheme, Stora Enso has set up a village development fund which aims to distribute benefits fairly and equally amongst villagers, and to further support local development and livelihoods. Most of the EUR 221 000 of funding

allocated during 2015 (EUR 168 000 during 2014) was directed to infrastructure projects such as electricity and water supply connections, road upgrading, and purchases of livestock to enhance food security.

These projects have been designed together with the villagers according to their needs and requirements, in line with Stora Enso's guidelines.

### Chennai, India

In June 2015 Stora Enso announced the permanent closure of the group's corrugated packaging converting unit in Chennai, India, due to long-term unprofitability and a major decrease in local market demand. The packaging unit in Chennai came into Stora Enso's ownership in July 2011, when the group acquired 51% of Inpac International in China.

The mill closure involved negotiations with the local employees' union. The mill had employed 350 people, who received compensation and other support including training, medical care, and assistance in finding new employment. The non-profit BSR provided advice on a responsible closure plan.

Chennai is one of the fastest growing metropolitan cities in India. Its growth has triggered large-scale migration, and many children live in the city's slums or on its streets. To make a positive contribution on our departure, Stora Enso provided support for Save the Children's work in Chennai, which aims to improve children's quality of life, enhance the life skills of adolescents, make communities and caregivers more sensitive to children's needs, and improve water sanitation and hygiene. For more details of our work with Save the Children see [pages 9](#) and [19](#).

# Our workforce

Stora Enso strives to provide a safe and rewarding workplace for employees and contractors, and to be an attractive employer to potential recruits. This report section introduces the occupational health and safety (OHS) and human resources (HR) policies and practices that support these goals.



## Opportunities and challenges

### Change through people

As Stora Enso transforms from a traditional paper producing company into one that focuses more widely on renewable materials, the work that our people do and the skills they need are changing as well. Growing in new markets with a new, younger workforce, while dealing with the different demographics of our workforce in Europe requires well-planned people management, starting with responsible leadership. This is especially important in safety management.

Differences in operating contexts, such as the availability of a suitable workforce, challenge our operations, but at the same time, the higher educational level of growing middle classes provides an expanding pool of potential employees with a good understanding of safety topics. Increasing awareness of health and well-being also support our goal of promoting our employees' health and safety globally.

**Building up a company-wide safety culture means that everyone is responsible for making every workday accident-free.**

## Our policies

### Leadership in the forefront

#### Occupational health and safety

Leadership is the key to take safety from a compliance mindset to a strong safety culture. To provide a solid foundation, our occupational health and safety (OHS) function relies on Stora Enso's Health and Safety Policy and our OHS Mode of Operation, which defines how we manage OHS topics in practice and integrate them into annual planning and reporting. Other relevant policies applied in our people and safety management include:

- Code of Conduct
- Supplier Code of Conduct
- Minimum requirements for labour conditions
- Diversity Policy.

#### Human resources

Stora Enso's People Strategy guides our efforts to provide employees with a safe work environment and good opportunities for personal development. This strategy focuses on four key policy areas:

- Leadership
- Workforce planning and recruitment
- Alignment and engagement
- Occupational health and safety.

**How we work**

**Everybody home safe, every day**

**Occupational health and safety**

Stora Enso’s long-term goal is to become an accident-free workplace. While this work begins with our leaders, building up a company-wide safety culture means that everyone is responsible for making every workday accident-free.

Safety management at Stora Enso is based on international standards like OHSAS 18001, but our processes go beyond those requirements. Our Safety Toolbox is a set of tools to be used throughout the company. It includes, for example, practical support on safety observations, a daily practice of giving and receiving feedback on safety behaviour, and monthly management safety rounds that involve managers discussing the reasons behind unsafe behaviour with their employees, and giving positive feedback on safe behaviour and safety initiatives.

Responsibility for implementing each tool and programme in our units lies with line management, supported by local staff and the group-level OHS function. During 2015 our safety tools were updated to simplify reporting and clarify their structure based on feedback from across the company. The revamped tools will be rolled out during 2016.

Local OHS committees and working groups at our units provide a forum for taking up safety related topics and suggestions. Our country-level OHS networks in Finland, Sweden, and Germany also share good practices and organise training to enhance our safety procedures and competencies. Our OHS Management Team, consisting of division representatives, acts as a cross-functional body, developing and aligning group-wide OHS programmes. The OHS Steering Group, established in 2015, directs strategic, long-term planning

at group-level, and steers the implementation of our OHS roadmap.

Our units report monthly on safety performance data including total recordable incidents (TRI), lost-time accidents (LTA), attendance rates, and the numbers of safety observations per employee. Stora Enso’s on-site and forestry contractors report separately.

**Promoting safety among contractors’ employees**

Stora Enso’s approach to safety extends to contractors, suppliers, and on-site visitors. We encourage everyone to give feedback and provide ideas on how to further improve our safety practices. Our joint ventures may have contractors of their own over whom Stora Enso has less leverage, but we cooperate closely with our partner companies to ensure the safety of these contractor employees as well. For more information about how we work with our suppliers and contractors see **pages 38–41**.

The construction of the Beihai Mill in Guangxi, China, for example, requires large numbers of contractor employees. Our Supplier Code of Conduct and OHS management standards are integrated into all Stora Enso

contracts in Guangxi, meaning that any breaches of these requirements are considered breaches of the entire contract. Construction management and project safety teams supervise and regularly inspect and audit the site to ensure compliance with our standards. The safety management system for the construction project is based on the OHSAS 18001 standard, and future mill operations will be similarly certified within two years of beginning commercial operations.

**Human resources**

Leadership in people and safety management is Stora Enso’s top priority, as it constitutes the strongest driver behind company performance and our winning culture. We measure our progress in this area with our overall Leadership Index, which measures the perception our personnel have of their leaders. Stora Enso’s approach to leadership is described in more detail in the **Progress Book**.

Improving our employee performance management and engagement is another priority for us. We set targets for both our business and our people, and follow up on them during annual performance appraisals. We are transparent about the way we use compensation to attract and keep the best people.

We believe that diversity of thought, skills, and background are key factors behind successful business and innovation.

**Hiring locally**

It is important that our new investment projects are staffed with managers and employees who are well-grounded in local cultures. While there is often an initial need for expatriate employees, we make every effort to hire locally wherever possible, especially for senior management positions. Local hires usually begin as early as during the construction phase, bringing economic benefits to the local community right from the start.





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In Guangxi, we have succession plans in place for expatriates in order to increase the number of locally hired people. At the end of 2015, 77% of our employees in Guangxi were local (80% at the end of 2014), while our management team included four managers of Chinese origin and nine expatriates.

In Uruguay, our joint operation Montes del Plata has a local workforce development programme that focuses on recruiting from nearby communities for mill operations. By the end of 2015, 58% of Montes del Plata personnel working at the mill were from the Colonia Department where the mill is located. According to data presented by the consultancy CIFRA, 45% of Conchillas residents, the closest community to the mill site, have employment connected to Montes del Plata.

**Fair working conditions**

All Stora Enso units are expected to work systematically to ensure that employees are treated with respect and fairness. These minimum requirements for labour conditions create an environment where workers are both willing and able to perform their tasks. Stora Enso

defined a new set of minimum labour conditions in 2014, and these conditions are now being implemented throughout the company.

**Progress**

**Enhancing performance on safety and leadership**

**Occupational health and safety**

Total recordable incident (TRI) and lost-time accident rates (LTA) function as our key performance indicators (KPIs) for occupational safety. By the end of 2015, our TRI rate fell to 11.0 (12.5 at the end of 2014) and the LTA rate declined to 4.7 (5.2). Stora Enso's short-term targets were to achieve a TRI rate of 8.8 and an LTA rate of 3.6 by the end of 2015 (30% reduction from 2014 levels). Despite this improvement, our target levels were not achieved. The group's new safety targets will be communicated in the Interim Review for the first quarter of 2016.

The group-level attendance rate for 2015 was 96.9% (97.0% in 2014). By the end of the year 74 of Stora Enso units had appointed joint safety committees (69, covering 81% (74%) of our total workforce. Recorded safety observations per employee increased to 17.4 (15.6).

Other focus areas in our OHS management work during 2015 included:

- A Safety Leadership training programme for divisional management teams and mill managers
- Strengthening our OHS culture by enhancing internal communications and increasing awareness of our safety tools, also in our offices
- The updating of our Safety Toolbox, which will be rolled out throughout the company during 2016.

**Fatal accidents**

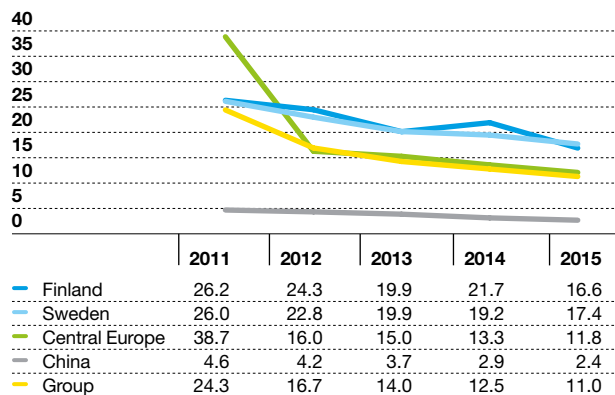
In 2015, five contractor employees working for Stora Enso and two contractor employees working for our joint operations were killed in accidents. These accidents are unacceptable for Stora Enso.

Four Polish citizens, employed by a Stora Enso Logistics contractor, were killed in a fire on a tugboat in Sweden in September 2015. The boat was contracted by Stora Enso Logistics on behalf of Wood Supply Latvia for transporting pulpwood from Latvia to Nymölla Mill via Sölvesborg. The accident took place at night when the ship was anchored in the Sölvesborg Harbour.

In July, a driver employed by our joint operation Veracel's contractor was killed in a traffic accident. The contractor was immediately given re-training in employee safety management. However, another employee of the same Veracel contractor was killed in November after being crushed between two vehicles while attempting to tow his water truck off a slope. The contract between Veracel and the contractor was cancelled immediately following this second accident.

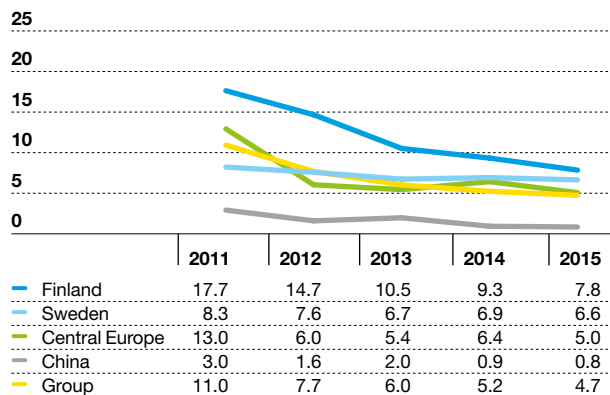
**Total recordable incident rates (TRI)**

Number of incidents per one million hours worked



**Lost-time accident rates (LTA)**

Number of lost-time accidents per one million hours worked



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In December a chain saw operator employed by a sub-contractor of one of Stora Enso’s contractors in Guangxi was killed after being hit by a felled tree at a harvesting site.

**Enhancing contractors’ safety in Guangxi**

During 2015 we developed a new incident reporting system for Guangxi to analyse the root causes of safety incidents. More robust follow-ups of corrective actions were conducted, particularly at our plantations. To create better awareness, employees are regularly informed about safety performance and individual incidents.

A rapid escalation of construction activities took place at the Beihai Mill site in 2015. To ensure effective safety management, we established a site-wide system that defines rules and procedures for all of the contractors and people working at the site, including an introductory safety briefing mandatory for anyone entering the site.

**Human resources**

Stora Enso’s key performance indicator (KPI) for leadership, the Leadership Index, measures our personnel’s perception of their leaders, and is calculated based on our annual employee survey. Our goal is to reach an index of 80/100 by 2018. In 2015, the Leadership Index was 79 (76 in 2014).

Our target is that all Stora Enso employees should be involved in at least one performance review meeting with their manager annually. In 2015, 91% of our employee survey respondents stated that they had taken part in a performance review during the past 12 months (88% in 2014).

In 2015 many of our human resources activities were related to leadership. These actions are covered in more detail in the **Progress Book**. Our Reconnect 2015 event brought together 300 Stora Enso employees from different functions and backgrounds, enabling them to share of ideas on how the company can become more

customer-focused and create differentiation through innovation. The best of the resulting ideas are now being realised.

**Providing living wages**

One of our most significant steps towards fairer labour conditions in 2015 involved defining and surveying living wage levels in seven locations. We worked with the global non-profit sustainability organisation BSR to define and calculate living wages in Brazil, India, China, Pakistan, Russia, Laos, and Uruguay. BSR defines living wage as a level of earnings that best corresponds to the actual costs of acquiring the goods and services that are necessary for a basic standard of living, in line with internationally accepted definitions. Our current minimum salary levels exceed the living wage estimates in six of these countries. The exception is Laos, where three employees, while earning well above national minimum wages, have an income 5% below the living wage threshold estimated by BSR. Understanding the living wage situation in Laos even better is one of the key actions included in our human rights action plan for Laos, defined in 2015 (for more details see [page 20](#)).

**Standard entry wages and local minimum wages<sup>1</sup>**

**Ratio of our standard entry level wage to the local minimum wage**

Brazil <sup>2</sup>	1.1
China <sup>3</sup>	1.4
Laos	1.1
Pakistan <sup>4</sup>	1.1
Uruguay <sup>5</sup>	1.6
Estonia	1.3
Latvia	1.1
Poland	1.0
Russia	1.0

<sup>1</sup> In material locations based on the social risk assessments of our operations, compared to minimum wage levels set at national, state, or provincial level as applicable. The ratio shows how many times larger our entry level wage is compared to the local minimum wage. In certain countries guaranteed benefits are included in the entry level wage.

<sup>2</sup> Including employees of our 50%-owned joint operation Veracel.

<sup>3</sup> Due to variations in regional minimum wages the ratio is calculated as a weighted average for Stora Enso’s units in China. The weighting is based on the units’ total number of employees.

<sup>4</sup> Including employees of our 35%-owned joint venture operation Bulleh Shah Packaging.

<sup>5</sup> Including employees of our 50%-owned joint operation Montes del Plata.

**Safety comes first at Beihai Mill**

READ MORE

Stora Enso is constructing the group’s largest mill investment to date, the Beihai Mill, in Southern China. Despite thousands of on-site workers and challenging circumstances, our safety programme has made safety a natural part of our day-to-day activities.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)



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### Share of female employees at Stora Enso

	2015	2014
Number of employees at year-end <sup>1</sup>	25 011	26 543
Share of women among all employees (%)	24	22
Women in the Group Leadership Team	3 out of 13	4 out of 12
Women in the Board of Directors	2 out of 8	3 out of 9

<sup>1</sup> All consolidated data in our Sustainability Report 2015 excludes employees of our 50%-owned joint operations Montes del Plata and Veracel.

### Compensation and equal opportunity<sup>1</sup>

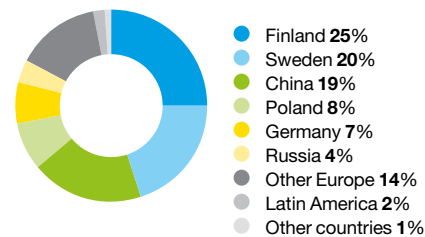
	Ratio of highest individual compensation to median salary <sup>2</sup>	Female employees' remuneration as a proportion of male employees <sup>3</sup>
Finland	11	95%
Sweden	27	99%
Poland	21	Not available
Germany	14	91%
China	52	100%

<sup>1</sup> Figures for the five largest countries in terms of the total number of employees.

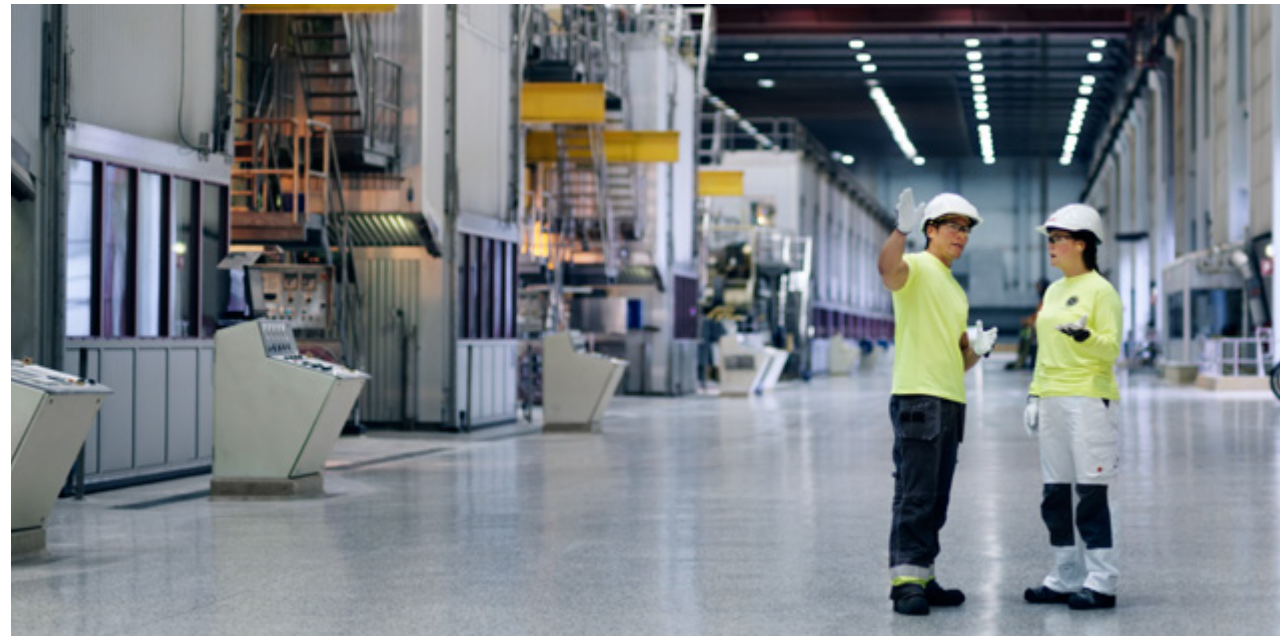
<sup>2</sup> The ratio shows how many times larger the highest individual compensation is compared to the median salary.

<sup>3</sup> Calculated using weighted averages based on each country's employee categories as applicable. Figures in Finland and Sweden are based on evaluations covering approximately 40% (Finland) and 60% (Sweden) of the total workforce.

### Employee distribution by country<sup>1</sup>



<sup>1</sup> All consolidated data in our Sustainability Report 2015 excludes employees of our 50%-owned joint operations Montes del Plata and Veracel.



### Employee distribution by gender, and employee turnover

	Americas		Asia		Europe		Group total
	Female	Male	Female	Male	Female	Male	
Employees by gender	16%	84%	42%	58%	19%	81%	
Employee turnover	14%	12%	90%	45%	7%	6%	18%
Number of hires <sup>1</sup>	22	63	639	873	240	755	2 592
Number of leavings <sup>2</sup>	10	46	1 909	1 346	268	893	4 472

<sup>1</sup> Hires: numbers of permanent employees joining the company. Excludes hires due to acquisitions.

<sup>2</sup> Leavings: numbers of permanent employees leaving voluntarily or due to restructuring, retirement or death. Excludes leavings due to divestments.

### Employee distribution by age and region

Age	Americas	Asia	Europe	Group by age
Up to 30	26%	46%	13%	20%
31-50	61%	49%	53%	53%
51 and over	13%	4%	34%	27%
Group by region	2%	20%	78%	



# Business ethics

Stora Enso's goal is to focus on wider ethical topics rather than mere compliance with regulations. We believe this approach will lead to successful business, foster accountability, and enhance our good reputation.



## Opportunities and challenges

### Ensuring compliance in a complex global environment

Compliance with laws and regulations is the highest possible priority for any global industrial company today. However, we believe that adopting a wider ethical approach is a must for us as a value-driven organisation.

Entering high-risk emerging markets offers excellent business opportunities, but also entails exposure to serious risks relating to topics such as corruption and fraud. Joint venture agreements may also expose a company to risks from a competition law point-of-view. Legislators have given governments and authorities impeccable tools to combat corruption, such as the UK Bribery Act and the US Foreign Corrupt Practices Act. These laws place high demands on companies' controlling mechanisms, but they also help to build trust among to both their employees and partners.

New policies, such as the new EU Data Protection Regulation, set requirements concerning the processing of personal data, with heavy fines imposed for infringements. Cybercrime meanwhile represents a major challenge for companies.

## Our policies

### Clearly setting out our company's values

The Stora Enso Code of Conduct is a single set of values defined for all our employees, to provide guidance on our approach to ethical business practices, environmental values, and human and labour rights. These same values are applied wherever we operate.

Other policies relevant to ethics and compliance include:

- Business Practice Policy, which gives guidance on ethical business practices relating to topics such as anti-trust, corruption, fraud, and conflicts of interest
- Gifts and Hospitality Guideline, which defines how our personnel should address topics related to covering expenses, and giving and accepting gifts and hospitality
- Third Party Due Diligence Guideline, which ensures that we have adequate procedures in place to help prevent bribery committed by third parties
- Competition Law Compliance Programme, which introduces to anti-trust and competition legislation, and explains the approval processes for benchmarking, mill visits, and competitor contacts
- Supplier Code of Conduct.

**Top level commitment is key in our efforts to make Stora Enso a more value-driven organisation.**

How we work

Combatting misconduct on all fronts

Stora Enso’s Ethics and Compliance function is a sub-function under our Legal team, headed by our General Counsel, who reports directly to the CEO. Our Ethics and Compliance Board, a governance body appointed by the CEO that met four times in 2015, monitors Stora Enso’s legal compliance and ethical business conduct by following up on our Ethics and Compliance Action List. In 2015, the list included training and communications efforts and the monitoring of the status of potential non-compliance cases. Our Division Compliance Forums, established in 2015, help to integrate ethics and compliance into business decisions, and support and advise the Executive Vice Presidents of the divisions on compliance matters.

Stora Enso’s Ethics and Compliance Strategy forms the basis for annual action plans. The strategy has four focus areas:

- Top level commitment
- Improved communication and training
- Intensified efforts in countries with heightened concerns
- Developing our grievance channels.

Top level commitment

In our efforts to make Stora Enso a more value-driven organisation we highlight the significance of top level commitment. All managers in key positions are required to make an annual personal commitment to our Code of Conduct and Business Practice Policy, and to undertake to provide related training and information for employees within their respective organisations.

We also organise ethics workshops for our employees in managerial positions, to provide training and promote discussions on ethical questions.

Communications and training

Our communication strategy for ethics and compliance aims to ensure that Stora Enso’s employees and business partners all understand what ethical behaviour is, and how they should navigate through ethical dilemmas in their everyday work.

All our employees receive Code of Conduct training through an e-learning tool, or through face-to-face training provided for those who do not have direct access to computers. Our aim is that new employees are trained within their first month. In addition, an in-depth e-learning course on anti-trust and anti-corruption is mandatory for all members of our Group Leadership Team, divisional and mill management teams, and for all employees dealing with competitor contacts, purchasing, marketing, and sales.

Intensified efforts in risk areas

Entering high-risk emerging markets and joint venture agreements can entail serious risk exposures for

our business. Our risk assessment procedures on compliance cover all our units. The most significant compliance risks in our global operations relate to corruption and anti-trust.

Our management and employees in Brazil, India, Pakistan, and China receive extensive face-to-face training on our Business Practice Policy. Additionally, employees of our joint ventures Bulleh Shah Packaging, Veracel, and Montes del Plata all receive training on their respective Codes of Conduct and Business Practice Principles. The training sessions cover topics such as human rights, environmental impacts, safety, and ethical practices.

Anti-trust guidelines designed for our joint ventures are implemented with the help of related training in our joint ventures in Uruguay, Brazil, Pakistan, and China.

Formal grievance mechanisms

Our employees are encouraged to report any suspected cases of misconduct or unethical behaviour to their



How can you tell if a company is truly ethical?

According to Professor **Hans De Geer**, an expert in business ethics who runs Stora Enso’s ethics workshops, ethical business is about identifying overarching company values.

“An ethical company defines values that are important to them and can be accepted by their stakeholders. Being profitable can be aligned with those values. If profitability is a company’s only mission, that is a very narrow definition of their purpose,” De Geer explains.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)



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own supervisor, or to our Human Resources or Legal functions. Our employees may also report their concerns in confidentiality to the Head of Internal Audit. Our Supplier Code of Conduct also obliges our suppliers to report any non-compliance with the Code to Stora Enso's Head of Internal Audit.

Stora Enso uses an additional **external service** through which our employees globally and external stakeholders in certain locations can anonymously report potential non-compliance cases by phone, by mail, or online. This service, which covers all of our units, is in most cases free for callers, and available 24 hours a day, seven days a week.

All potential non-compliance cases are duly investigated. The findings are recorded and reviewed by Stora Enso's Heads of Internal Audit and Ethics and Compliance function, and reported to our Ethics and Compliance Board as well as our Board of Directors' Financial and Audit Committee. Proven cases of non-compliance can lead to disciplinary or legal actions.

Our 50%-owned joint operations Veracel and Montes del Plata, and our 35%-owned equity-accounted investment Bulleh Shah Packaging each have their own local grievance channels.

## Our grievance channel was opened to external stakeholders in China, India, Russia, Laos, and Brazil in 2015.

### Progress

#### Enhanced training and monitoring

We have developed an index that enables us to follow and evaluate our employees' perceptions of topics related to our Code of Conduct. The index is based on employees' responses to related questions in our annual employee survey. In 2015 this index improved to 79 (75 in 2014). Our goal is to maintain this positive trend.

During 2015 we established a new Ethics and Compliance Self-Assessment Tool (T.E.S.T.) to give our divisions a better overview of the progress their units are making on implementing our policies and compliance measures, while also identifying possible gaps and risks related to compliance. The T.E.S.T. tool will be run twice a year. Its first two rounds were successfully finished in June and December 2015.

New Division Compliance Forums were also established in 2015. These forums bring together the heads of key divisional functions, and they play an important role in steering and monitoring compliance within divisions. The forums' first meetings were held in August 2015, covering the results from the T.E.S.T. tool, and also establishing divisional key performance indicators.

By the end of 2015, 22 421 Stora Enso employees had received training on our Code of Conduct, and 3 919 had completed an in-depth e-learning course on anti-trust and anti-corruption. In addition, 2 523 Stora Enso managers in key positions with regard to compliance made personal commitments to our Code of Conduct and Business Practice Policy during 2015.

A further 116 employees took part in our Ethics Workshops (75 in 2014).

#### Making ethics and compliance more visible

During 2015 we put special emphasis on enhancing communications related to ethics and compliance.

We updated internal websites to include platforms that enable employees to ask questions and discuss concerns. In September 2015, we launched a new "Ethical Spotlight of the Month" concept to introduce and promote discussions on topics of interest, and to provide material for our units to use in their internal discussions.

#### More ways to speak up

In March 2015, we rolled out the Do What's Right Mobile App to make it easier for our employees to find and share compliance-related information and to report potential violations. In addition, our external grievance channel was made available to stakeholders in China, India, Russia, Laos, and Brazil. This was partly in response to the findings of our group-level 2014 human rights assessment, which recommended improvements in our grievance channels.

In 2015 a total of 67 reports received through Stora Enso's various grievance channels were identified as potential non-compliance cases (46 in 2014). Proven misconduct leading to disciplinary and/or legal actions was identified in 10 cases (18 in 2014), while six further complaints were found to be valid without involving misconduct. None of the proven misconduct cases were related to child labour, forced labour, or discrimination.

#### Breakdown of potential non-compliance cases

	2015	2014
Fraud	8	12
Corruption	26	14
Anti-trust	2	1
Conflict of interest	6	6
General human resources	17	9
Health and safety	0	1
Miscellaneous	8	3
<b>Total</b>	<b>67</b>	<b>46</b>



# Sourcing

In addition to wood and fibre, Stora Enso sources other raw materials, products, and services from nearly 30 000 suppliers and contractors globally. In our purchasing decisions we recognise our responsibility to ensure that our suppliers are committed to high sustainability standards.



## Opportunities and challenges

### Extended responsibility

We source a wide range of raw materials, products, and services for our business globally. In 2015 purchases of materials, goods, and services excluding fibre represented 50% of our total variable costs, while fibre procurement covered the remaining 50%. In some areas the concept of responsible sourcing is a relatively recent development, and local suppliers may not be familiar with sustainability requirements and audits. To demonstrate the added value that sustainability brings, we must understand the main drivers for business in each location. At the same time, however, increasing awareness of sustainability topics makes this an opportune time to promote responsible sourcing globally.

Although we work in diverse regulatory environments, we must consistently respond to our stakeholders' demands concerning transparency along supply chains. Imposing

**In addition to enforcing our Supplier Code of Conduct, we actively engage with our suppliers and help them to improve their sustainability.**

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sustainability requirements on our suppliers also builds up their capacity to meet such increasing demands, and creates a larger pool of sustainable suppliers.

**Our policies**

**Setting high standards for sourcing**

Stora Enso strives to identify and address the impacts of our operations along our supply chains. The Stora Enso Supplier Code of Conduct (SCoC) plays an integral role in our sourcing. It is a binding legal document that imposes minimum sustainability requirements on our suppliers, covering human and labour rights, occupational health and safety, environmental commitments, and responsible business practices. It is applied globally to both direct and indirect sourcing.

Other policies that support responsible sourcing:

- Sourcing Strategy, which sets out a consistent framework for “Sourcing Best Partners”
- Practical Guide for Stora Enso Suppliers, which gives more practical guidance on the topics included in our Supplier Code of Conduct
- Sourcing Guideline, which defines how sourcing actions should be approved, executed, managed, and controlled
- Purchasers’ Guidance, which gives practical guidance on the sourcing process and how to tackle supplier-related sustainability challenges
- Policy on Wood and Fibre Sourcing, and Land Management.

**How we work**

**Constructive engagement with suppliers**

For Stora Enso, responsible sourcing means demonstrating our deep commitment to sustainability,

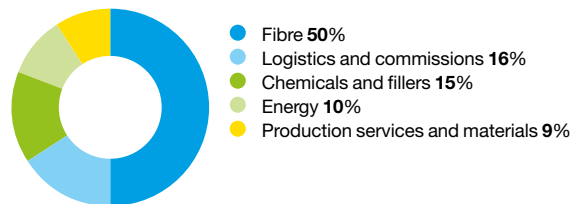
addressing the concerns of key stakeholders, complying with regulatory frameworks, adhering to best practices, and managing supply risks. These principles are put into practice in the everyday work of all employees responsible for sourcing.

Our approach to responsible sourcing has become more deeply embedded in purchasing and supplier management since our new, more centrally led sourcing organisation was established in 2014.

The materials and products we purchase include wood and fibre-based materials such as pulp and paper for recycling (PfR), as well as chemicals, fillers, energy, fuels, spare parts, and maintenance, logistics, and IT

**Breakdown of raw material and service costs**

% of our total variable costs



services. Our key performance indicator (KPI) measures how much of our total supplier spend is covered by our Supplier Code of Conduct.

**Our responsible sourcing process**

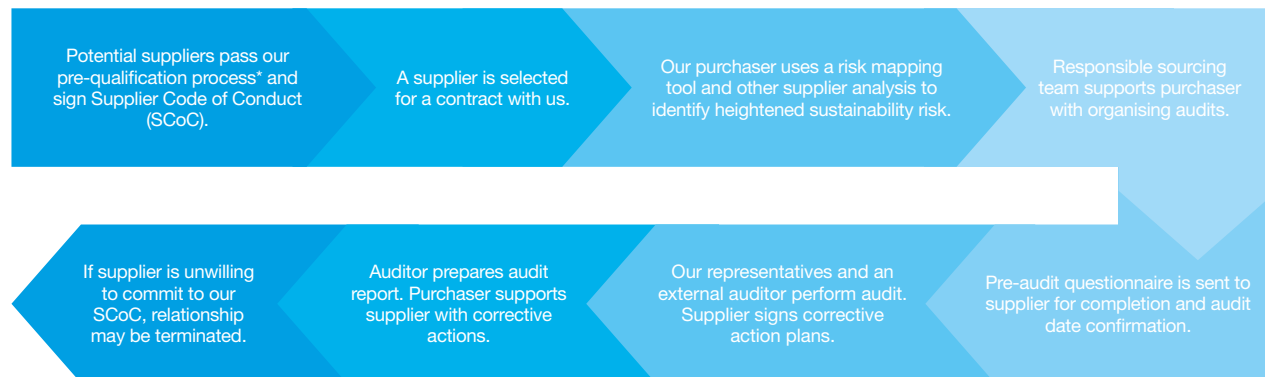
A supplier who wishes to trade with Stora Enso must first pre-qualify before being considered for a contract. Like our Supplier Code of Conduct, this pre-qualification process is applied to all sourcing globally. We use **D-U-N-S® numbering**, a globally recognised and controlled way to identify companies and to maintain accurate, comprehensive, and timely information about our suppliers.

Pre-qualification includes a set of basic questions, and the requirement to submit a signed Supplier Code of Conduct. To increase understanding of sustainability along the supply chain, Stora Enso suppliers are also required to provide information about their own supply chain.

**Competence building and auditing**

In addition to enforcing our Supplier Code of Conduct, we engage with our suppliers and help them to address sustainability topics. This may involve on-site visits,

**MANAGING SUPPLIER SUSTAINABILITY RISKS AT STORA ENSO**



\*The pre-qualification tool was launched in most of Stora Enso’s European units in September 2015. The remaining units will begin using it during 2016.

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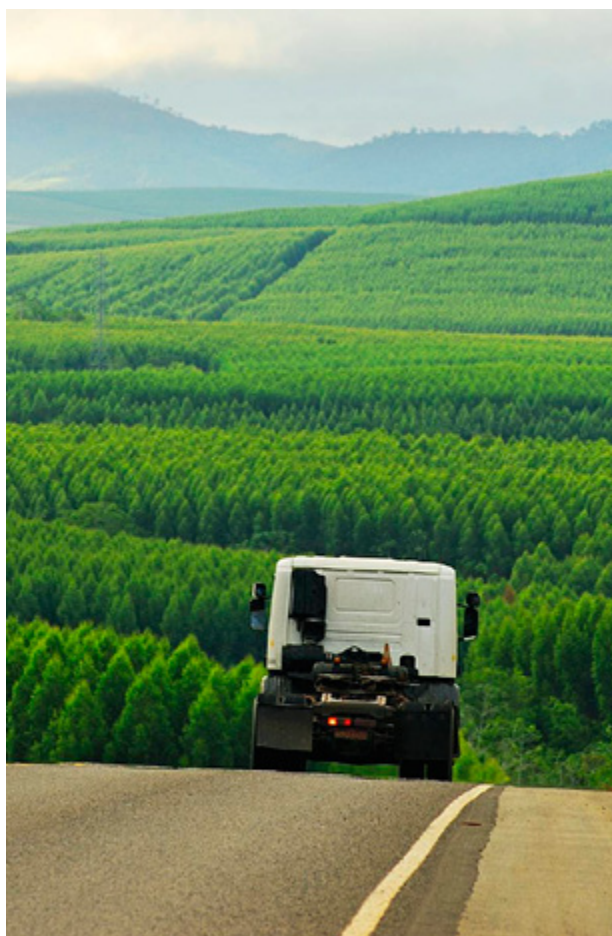
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detailed supplier assessments, or in-depth training sessions, depending on the supplier’s location and product category.

Suppliers may be selected for a third-party sustainability audit, conducted together with the purchaser, based on a pre-evaluation of the supplier’s social and environmental risk profile. Our risk mapping tool was developed in collaboration with the non-profit



organisation BSR in 2014, and updated in 2015. It includes criteria for geographical location, the nature of the supply chain, product category, and our purchasing power.

Any non-conformances with our Supplier Code of Conduct found during audits are followed up with supplier meetings to discuss the findings and define corrective action plans. Suppliers must sign up to these plans, and our local purchasers then monitor progress on their implementation. If a supplier does not take the scheduled corrective actions, new discussions are held to examine the reasons, at higher management levels if necessary. In cases where suppliers are not willing to improve their performance, relationships are terminated.

**Pulp procurement**

Most of the pulp used at Stora Enso’s mills is produced within the company, but for quality and logistical reasons we also purchase some pulp from external suppliers for our paper and board production. In 2015, 2% of our pulp was purchased externally (pulp from our joint operations Veracel in Brazil is considered to be internally produced in these figures).

As with wood purchases, we ensure that all of the pulp we purchase comes from sustainable sources, by applying third-party-verified traceability systems and forest certification systems such as the Forest Stewardship Council’s®<sup>1</sup> (FSC) Chain of Custody/ Controlled Wood scheme, the Chain of Custody/ Due Diligence System of the Programme for the Endorsement of Forestry Certification (PEFC), and the ISO 14001 environmental management standard. All the pulp we purchase or produce also complies with the EU Timber Regulation, which ensures that no illegally harvested wood or wood products enter the EU market. For more information about our approach to sustainable wood procurement see [pages 43–49](#).

<sup>1</sup>Stora Enso Communications’ FSC ® trademark license number is FSC-N001919.

**Paper for recycling**

Stora Enso sources paper for recycling (PfR) from various local authorities and waste management companies. For more details of our PfR use see [pages 59–60](#).

**Contractors**

In some of our operations we hire contractors for longer-term work such as forest and plantation management. We also hire contractors for shorter periods of time, for example in large-scale investment projects and mill maintenance. During 2015 on average some 3 000 employees hired by our contractors worked daily on the construction site of our board mill in Beihai, China. Our Supplier Code of Conduct also applies to such contractors. While contractors are primarily responsible for their own employees, we make every effort to ensure that everyone working on our premises is treated fairly and receives adequate safety training.

We reviewed our approach to contractors during 2015, based on our responsible sourcing work plan for the year 2015 and on the findings of our 2014 human rights assessments. Contractors’ performance has particularly been monitored in relation to human and labour rights.

**Progress**

**Focusing on training**

Our key performance indicator (KPI) for responsible sourcing measures the proportion of our total supplier spend covered by our Supplier Code of Conduct. By the end of 2015, 90% of Stora Enso’s spending on materials, goods, and services was covered by the Supplier Code of Conduct (78% at the end of 2014). In 2016 this indicator will also cover our Wood Supply units, and our target is to reach 90% coverage by the end of 2016.



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During 2015 we provided extensive training for our purchasers on a variety of topics, including supplier pre-qualification, and children’s rights and business principles. Most of these training sessions used a train-the-trainer concept, where the trained purchaser is then responsible for training their team. A total of 231 purchasers participated in training sessions during 2015.

In 2015 Stora Enso introduced a new Supplier Management Tool. This supplier on-boarding process was designed to improve the pre-qualifying process used for potential suppliers.

**Supplier audits**

We continued our supplier audits in 2015 with a focus on high-risk suppliers in China. In the first half of the year we paid special attention to suppliers who had been audited in 2014, aiming to complete corrective action plans. In the second half of the year we focused on auditing suppliers not previously audited under our Supplier Code of Conduct, involving a total of 39 Chinese suppliers (56 in 2014).

We also audit strategically important suppliers against our Supplier Code of Conduct before awarding them a contract. The supplier audits in China revealed non-conformances mostly relating to occupational safety, wages and working hours, and basic workers’ rights as defined in our Supplier Code of Conduct. In addition to the audits in China, we audited five of our global suppliers. These audits revealed non-

**By the end of 2015, 90% of our spending on materials and services was covered by our Supplier Code of Conduct.**

conformances particularly relating to wages, working hours, and work place preparedness for emergency situations. During 2015 we were forced to terminate five supplier relationships due to suppliers’ unwillingness to commit to the Code (seven in 2014).

**Sugar cane by-product sourcing in Louisiana, USA**

Stora Enso is building a demonstration and market development plant in Raceland, Louisiana, to validate extraction and separation technologies developed by Viridia – a start-up company purchased by Stora Enso in 2014 – to convert cellulosic biomass such as wood or agricultural residual into highly refined sugars. The plant is due to start operating in 2016.

The demonstration plant is located in the vicinity of an existing sugar mill and sugar cane plantations, enabling it to use bagasse by-product from the mill as feedstock.

The sugar cane plantations were audited in December 2014 to verify that the feedstock supplier’s operations comply with Stora Enso’s Supplier Code of Conduct.

The sugar industry in Louisiana uses migrant workers in harvesting and production, and this was one the major issues examined in the audit. During a 2015 field visit, Stora Enso evaluated labour rights in the bagasse supply chain and among contractors working at the construction site. Some areas were identified where suppliers’ current labour practices may not meet international standards, even though they comply with US legislation. We are currently investigating ways to address these issues.

Another issue of concern in the bagasse supply chain is that sugar cane biomass left in the fields following harvesting is burnt, leading to air pollution close to residential areas. We are investigating the viability of collecting this residual for use in our production processes.

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**Driving change with better sourcing**

Companies face various challenges along their supply chains. Working with suppliers who are not familiar with the different aspects of sustainability can be challenging.

“Suppliers want to know what’s in it for them,” says **Tara Norton**, Director, Supply Chain Sustainability at BSR, an international non-profit organisation. “When purchasers understand the challenges suppliers face, they are able to work in a more collaborative way. But suppliers also need to understand that not responding to sustainability requirements might mean losing business opportunities.”

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)



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# Forestry and Land Use

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# Forests, plantations, and land use

Sustainable forest management is in our immediate and long-term interest, as it keeps forests healthy and productive, and thus helps secure the long-term availability of this renewable resource.



## Opportunities and challenges

### Forestry in a changing world

Forests and plantations have become an increasingly important part of a wider global development agenda, especially in relation to combatting global warming. As a renewable natural resource wood represents a favourable alternative to materials based on fossil fuels. Trees absorb carbon dioxide (CO<sub>2</sub>) from the atmosphere, and together with wood-based products act as carbon sinks. If forests and plantations are managed sustainably, new generations of trees replace those that are logged, sequestering more CO<sub>2</sub> from the atmosphere.

Global warming already affects forests and plantations due to the changing nature of storms, floods, and droughts, though it could also create new opportunities, for instance in areas where rainfall increases in formerly arid regions. Such changes can be expected to impact our operational environment. However, well-managed forests can make entire ecosystems more resilient to negative impacts.

Global challenges such as population growth, increasing demand for agricultural land, and the widening gap between supply and demand for wood, require us to use forests, plantations, and other natural resources ever more efficiently, and to produce larger amounts of raw materials from less land. The need to conserve our remaining natural ecosystems is also increasing, necessitating new ways to integrate various land uses. Simultaneously, changing forest ownership structures in our main sourcing areas, fuelled by urbanisation, are bringing new challenges in relation to wood procurement.



**Our policies**

**Committed to sustainable forestry**

Stora Enso’s policy on Wood and Fibre Sourcing, and Land Management guides our work in relation to forestry and land use. This policy covers the entire cycle of forest and plantation management. Key goals include ensuring that we can trace the origin of all the wood we use. We also aim to maintain open dialogues with our stakeholders. Other policies that support sustainable forestry include, among others:

- Code of Conduct
- Supplier Code of Conduct.

**How we work**

**Ensuring the sustainability of fibre**

Stora Enso’s approach to responsible forest and tree plantation management and our related actions duly takes the economic, social, and environmental aspects of sustainability into account. We always comply with national legislation, but laws and regulations are only the starting point for our work, and we actively support and implement voluntary forest conservation and restoration measures both in lands owned, leased, and managed by the company, and in other areas where we purchase wood.

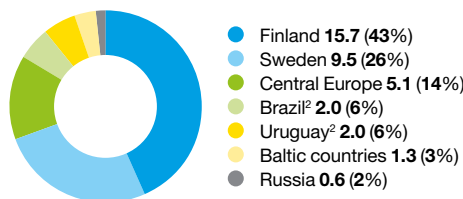
We are also active members of numerous local and global forestry associations, networks, and programmes. For more information about our cooperation with different stakeholders see **pages 9–10**.

To cover economic, social, and environmental aspects of sustainability in our forest and plantation operations, we apply the same comprehensive wood procurement process in all the regions where we

operate. Our wood procurement is organised regionally, with our supply units in Finland, Sweden, the Baltic Countries, Russia, and Central Europe each responsible for sourcing wood for the Stora Enso mills in these regions. Each of our tree plantations operates under the mill to which it supplies wood.

**Wood procurement by region<sup>1</sup>**

36.2 million m<sup>3</sup>



<sup>1</sup> Total amounts of wood (roundwood, chips and sawdust) procured within these regions for delivery to our mills (million m<sup>3</sup>, solid under bark).  
<sup>2</sup> Figures for Brazil and Uruguay include 50% of the wood procurement of our joint operations Veracel and Montes del Plata, based on annual pulp production.

Our Biomaterials division manages certain plantation projects that are not associated with a single mill, for example our trial plantation in Laos, while our forestry operations and mill investment in Guangxi, China, are the responsibility of our Consumer Board division.

Our wood procurement process covers the entire management cycle in both forests and plantations, including:

- Forest and plantation planning
- Silvicultural operations (everyday forest and plantation management)
- Wood harvesting
- Regeneration of forests and plantations
- Monitoring of each part of the process, for example through audits and self-assessments.

**Careful forest and plantation planning**

As trees take many years, and even decades, to mature, long-term planning is essential. As part of this planning we conduct ecological landscape plans and biodiversity

assessments to identify, conserve, and restore vital ecosystems and ecological features.

In 2015 89% of our wood came from managed semi-natural forests in the Northern Hemisphere where most forests are privately owned. Forest planning includes finding ways to optimise wood production and conservation. We work together with forest-owners to identify sensitive forest areas in need of protection.



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## Teaming up to protect biodiversity

In addition to their economic value as raw material for the forest industry, Nordic forests have important recreational and ecological values, related to leisure activities, landscapes, and biodiversity conservation, for instance. To underline the increasing importance of alternative targets for forest management Stora Enso has signed a unique partnership with WWF Finland.

“Stora Enso’s way of working is a fresh way to acknowledge the various objectives that forest-owners may have with regard to their forests,” says **Liisa Rohweder**, WWF Finland’s Secretary General.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)



In 2015, 11% of our wood came from tree plantations. When establishing new plantations, we use internationally approved principles, such as the Food and Agriculture Organisation’s (FAO) Voluntary Guidelines on Planted Forests, and we also certify our commercial plantations to ensure all three aspects of sustainability are duly taken into consideration. Stora Enso never establishes plantations in natural forests, protected areas, or water-sensitive locations. We only use land with low biodiversity value, such as former pasturelands. Our employees and forestry contractors are given on-the-job training on ecological management, and we continuously monitor the impacts of our operations on biodiversity, soil, and water resources.

We recognise that our plantations are an integral part of local land use, and we always evaluate and define sustainable land use practices for each location. After determining the scope of expected impacts and

possible remedies, we decide on whether or not to go ahead with the project. We remain in constant dialogue with our stakeholders and strive to make sure that land contracts are legitimate and fair.

### Sustainable silviculture

Stora Enso closely monitors the sustainability of the everyday management of the forests and plantations where we purchase wood.

All the roundwood, chips, sawdust, and externally purchased pulp supplied to our mills come from sustainable sources. We use a range of tools to ensure this, and to guarantee the sustainability of each part of the forest management cycle. These tools include forest certification and third-party traceability systems such as the Forest Stewardship Council’s (FSC) Chain of Custody/Controlled Wood scheme, the Chain of Custody/Due Diligence System of the Programme for

the Endorsement of Forestry Certification (PEFC), and the ISO 14001 environmental management standard.

We actively work with our stakeholders to promote sustainable forest management and the wider use of certification systems. In Russia and Brazil, for example, we promote group certification to encourage more suppliers and farmers to join these systems.

As certification programmes cover all three aspects of sustainability, they are a reliable indicator of responsible forestry. For this reason we follow our progress with a key performance indicator that measures the proportion of the lands owned and managed by Stora Enso that are covered by forest certification schemes.

We strive to increase the efficient use of land to produce more from less. We carefully monitor our progress with the help of a key performance indicator (KPI) that averages out the amounts of fibre we produce per hectare. At the same time, forest certification schemes ensure that improvements in efficiency do not compromise the ecological and social sustainability of our productive forests.

### Efficient and sensitive harvesting

Stora Enso is constantly developing low-impact and efficient ways to harvest trees. Wood Supply Sweden, for example, devised new techniques known as the “Right Method” in 2013, for application in individual sites. The goal has been to increase productivity and product quality in the removal of biomass, while reducing damage to the soil and creating a better

**We strive to increase the efficient use of land to produce more from less.**

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working environment. In response to the positive results from this scheme, other Stora Enso Wood Supply functions, Swedish forestry companies, and Swedish politicians have begun to promote the method. So far, some 1 300 Stora Enso employees have received training in Right Method final felling or thinning.

### Regeneration of forests and plantations

We always ensure that the forests and plantations where we harvest wood are regenerated. Often this is done with active planting or sowing, though in many areas active regeneration is complemented by natural seed dispersal from nearby forests, or by leaving seed trees in the harvesting area. Whatever the methods used, we always make sure the trees that we harvest will be replaced by new growth.

In Brazil, our joint operation Veracel goes beyond regeneration by conserving and restoring areas of natural rainforest. Approximately half of Veracel's 216 000 hectares of land are dedicated to rainforest preservation, including both natural regeneration and planting where natural regeneration is not possible. The goal is to restore Atlantic rainforest ecosystems and connect the remaining areas with forest corridors, enabling animals to move from one area to another. Veracel aims to restore 400 hectares of rainforest habitat every year through local partnerships. So far, 5 695 hectares of forest have been restored since 1994. In 2015 the replanting of rainforest was affected by a prolonged dry season in the region, which will be taken into account during replanting in 2016.

The Veracel Station visitor centre, established in an area of preserved rainforest habitat, conducts research, conserves native and endangered ecosystems, and provides environmental education for visitors.

### Detailed monitoring

We closely monitor the sustainability of our forestry operations throughout the management cycle, focusing

on their impacts on biodiversity, soil, and water resources. We regularly audit our suppliers and work together with local institutions to make sure everything is done according to the standards set by certification schemes and our own policies.

In Sweden, for instance, our monitoring of the environmental quality of felling sites is based on information received during assessments and feedback sessions conducted with harvesting teams. Some 100 felling sites are monitored in Sweden each year.

In China, we have continued our long-term cooperation with Flora & Fauna International (FFI) on biodiversity monitoring in tree plantations.

### Tree breeding

Stora Enso is working continuously towards the long-term goal of improving the quality of the eucalyptus trees grown in our plantations, so as to sustainably


enhance wood production per unit of land. Tree breeding targets may include factors such as increased biomass production (i.e. faster growth), improved fibre quality, frost tolerance, or resistance to pests and diseases. As a part of our breeding programme we are investigating the use of modern breeding tools, including marker assisted breeding and genetic engineering.

Our genetic engineering activities are in the research and development phase, and as with traditional clone improvements, it will take many years to develop genetically engineered clones. Field trials at one location in Brazil scheduled for 2017 will fully comply with the relevant local regulations. Stora Enso will not carry out any trials considered by the authorities to be unsafe or otherwise not permissible. Currently we have no plans to plant genetically engineered trees in any of our commercial plantations.

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### Innovative land use in Laos

"Could a tree-planting project increase food availability?" asks forestry expert **Stephen Midgley**. In Laos, Stora Enso is working with local villagers to develop agroforestry. Farmers are encouraged to grow rice, cassava, and maize between the trees in a new kind of planting design. "After nearly ten years of testing this system, it has been found to be supported by the community, whilst producing timber and helping with food supply," Midgley writes.

 [Read the full article in the Outreach Magazine](#)





Progress

Steady advances on certification

Stora Enso owns or leases lands with a total area of 967 000 hectares globally. We follow our progress on responsible forestry with a key performance indicator that measures the percentage of these lands covered by certification systems. Our target is to reach 96% coverage by the end of 2017. In 2015 coverage amounted to 90% (90% in 2014). The share of certified wood in our total wood supply was 80% (78%).

In 2015 the total amount of wood (including roundwood, wood chips, and sawdust) delivered to our mills was 36.2 million m<sup>3</sup> (solid under bark) (32.4 million m<sup>3</sup> in 2014).

In 2011 Veracel became one of the first companies in Brazil to promote group certification among its tree farmers. In 2014, Aspex, the association representing certified tree farms took over the management of the certification process, previously shared with Veracel. The pioneering certification group has certificates granted by both FSC and Cerflor (PEFC), making it the first group with dual forest management certification in the country. By the end of 2015, dual forest certificates had been obtained by 79 farmers for areas totalling 35 724 hectares, of which 15 351 hectares are planted with eucalyptus.

Local farmers are able to use Montes del Plata's lands for cattle grazing and honey production.

In 2015, Wood Supply Russia continued cooperation with WWF Russia to expand Stora Enso's FSC certification groups to more wood suppliers seeking forest certification. The company established three groups to make certification more accessible and cost-efficient for small and medium-sized logging companies. Such certification now covers forest lease areas totalling 814 128 hectares. Stora Enso's Russian subsidiary companies have been FSC-certified since 2006. Stora Enso and WWF Russia helped two new harvesting companies to obtain FSC certification for their forests during 2015.

Responsible and effective land use

Stora Enso keeps track of progress on land use efficiency with a KPI that measures the increase in the average volume of fibre produced per hectare in certified tree plantations owned and managed by Stora Enso. The target is to increase this average by 25% by the end of 2020 compared to the baseline figure for 2014. In 2015 the figure increased by 3%.

Alianzas in Uruguay

Alianzas, formerly called the Productive Integration Programme, is a Montes del Plata initiative that provides additional income for local farmers by enabling them to use their land to produce timber as well as agricultural crops. Participating farmers select parts of their lands to be used for plantation forestry, in return for financial compensation. At the end of the year 308 farmers with lands totalling approximately 35 000 hectares had joined the programme. It has been estimated that these plantation areas will account for one-third of all the wood procured by Montes del Plata.

Alianzas also promotes diverse land use by enabling local farmers to use Montes del Plata's lands for cattle grazing and honey production. By the end of the year, 180 farmers had taken advantage of this opportunity. Approximately 64 000 livestock and 4 000 beehives now

thrive on these lands. This improves local livelihoods, reduces forest fire risks, and helps to build stronger relationships with the community. To increase the level of trust between our business and local communities, Alianzas has set up networking opportunities for potential and current Alianzas members.

Correction of land contracts in Guangxi, China

Stora Enso leases lands with a total area of 86 236 hectares in four regions of Guangxi, of which 37% consists of social lands leased from village collectives, individual households, and local forest farms. In many cases these social lands have been previously sub-leased, sometimes repeatedly, resulting in chains of sub-leases. Often the original owners have not benefited from increased land rental prices because of these chains.

Stora Enso has been reviewing and correcting land lease contracts in Guangxi since 2009, when irregularities in the contract chains were first discovered. The extensive legal screening and correction process that followed is still ongoing, with the goal to have 100% of contracts corrected by the time the planned pulp mill starts up. The decision on the investment in the pulp mill will be made after the start-up of the board mill in mid-2016.

Social forestlands leased by Stora Enso in Guangxi

	31 Dec 2015	31 Dec 2014
Social forestland leased, ha	32 322	32 591
Lease area without contractual defects <sup>1</sup> , ha	16 471	16 003
Lease contracts without contractual defects, % of all contracts	63%	61%

<sup>1</sup> In the contracts without defects the ownership of land is clear or resolved, and contracting procedures have proven to be legal, authentic and valid.

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Our contract correction process includes:

- Desktop documentation reviews
- Field investigations
- Legal and operational risk analysis
- Stakeholder consultations
- The collection of missing documentation
- The signing of new agreements or amendments directly with the villages or households concerned
- In some cases, contract termination.

Our local team of legal and sustainability experts have been visiting all of the villages where the company has land contracts to conduct face-to-face interviews with villager representatives. So far, we have compiled almost 3 200 contract investigation reports that describe the initial legal screening processes as well as the resulting contract improvements and corrections. By the end of 2015, 63% of the 1 590 contracts under review were found to be free from contractual defects (61% by the end of 2014).

In irreconcilable cases we terminate leases in a responsible manner, considering all potential impacts. In 2015, we terminated identified irreconcilable contracts covering a total area of 401 hectares.

**Stora Enso leases 86 236 hectares of land in four regions in Guangxi.**



### Forests, plantations and lands owned by Stora Enso<sup>1</sup> as of 31 December 2015

Unit	Area	Certification coverage	Details of local landscapes and protected areas
Montes del Plata plantations and lands, Uruguay (joint operation with Arauco)	190 263 ha, of which 107 668 ha planted	FSC for 190 263 ha	Mainly pasturelands and agricultural fields. Remnants of native ecosystems, such as grasslands and riparian forests, have been protected within the company's lands.
Veracel plantations and lands, Bahia, Brazil (joint operation with Fibria)	215 650 ha, of which 84 571 ha planted for pulp production	CERFLOR (PEFC) for 177 259 ha; FSC for 177 259 ha	Dominated by pasturelands cleared from Atlantic rainforest between the 1950s and 1980s. 107 902 ha of Veracel's lands are protected, including a 6 063 ha Private Natural Heritage Reserve. These protected areas mostly consist of native forest remnants at different stages of regeneration (see page 46).
Plantations and lands, Rio Grande do Sul, Brazil	43 412 ha, of which 20 810 ha planted		Mainly pasturelands and agricultural fields. 14 000 ha of the total area is protected, including native grasslands, riparian forests and other habitats.
Wood Supply, Estonia	137 ha, of which 124 ha planted		No protected areas within this area.

<sup>1</sup> Including operations where Stora Enso's shareholding is at least 50% and size of the area exceeds 100 hectares. In addition to the forest and plantation areas listed above, Stora Enso owns: 49% of Bergvik Skog, who owns 2.3 million hectares of land in Sweden and 0.1 million hectares in Latvia; and 41% of Tornator, who owns 0.6 million hectares of forestland in Finland, 53 000 hectares in Estonia, and 12 000 hectares in Romania.

### Forests and plantations leased and managed by Stora Enso<sup>1</sup> as of 31 December 2015

Unit	Area	Certification coverage	Details of local landscapes and protected areas
Wood Supply, Russia	369 422 ha	FSC group certificate	In Russia protected areas are generally excluded from lease agreements. Areas amounting to 2 031 ha are protected as natural monuments (mainly marshlands). 409 ha are protected as natural monuments, including genetic pine reserves and watercourses.
Plantations and lands, Guangxi, China <sup>2</sup>	86 259 ha, of which 73 000 ha planted with eucalyptus and 11 900 ha with other species	Chinese Forest Certification Council certificate (PEFC) for 86 259 ha; FSC for 86 259 ha	Mosaic landscape including agricultural crop fields, forest plantations and settlements. No native ecosystems are found in the leased lands. Areas totalling around 1 300 ha are protected (including 184 ha of public benefit forest), consisting of steep slopes, buffer zones and other important areas for watershed protection.
Montes del Plata	45 769 ha, of which 36 670 ha planted	FSC for 33 095 ha	Mainly pasturelands and agricultural fields. Protected and sensitive areas are excluded from lease agreements.
Veracel	12 014 ha, of which 5 996 ha planted	FSC for 10 914 ha; PEFC for 10 914 ha	5 306 ha of leased lands are protected. They mostly consist of native forest remnants at different stages of regeneration.
Trial plantations, Laos	3 900 ha, of which 2 332 ha planted		The plantations are located within a mosaic of intensive shifting cultivation lands and traditionally protected remnants of native forests. One plantation area is located close to a National Biodiversity Conservation Area. The majority of the total area is covered by agroforestry production schemes.

<sup>1</sup> Including operations where Stora Enso's shareholding is at least 50% and size of the area exceeds 100 hectares.

<sup>2</sup> Based on verified areas, which differ slightly from contractual areas.



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# Energy

Most of our paper, pulp, and board mills use biomass in their internal energy production. In 2015 the share of biomass fuels in our internal energy production rose to 81% (79% in 2014).



## Opportunities and challenges

### Responding to EU calls for emission cuts

The European Union (EU) 2020 Climate and Energy Package and the 2030 Climate and Energy Framework, currently under revision, set out the way forward for industrial energy use in the EU. Revisions may include changes in the EU's Emissions Trading System (ETS) (for more information see [page 54](#)), possible new emission compliance rules for combustion boilers within the pulp and board industry, and tougher requirements on industrial energy efficiency.

Most of our paper, pulp, and board mills use substantial amounts of biomass in their internal energy production. This renewable energy is generated from harvesting residues, recovered wood, and by-products from our own production processes, such as black liquor, bark, and different kinds of sludge generated during pulp and paper production. Our Langerbrugge Mill in Belgium, for instance, can sell green certificates on energy markets due to its combined heat and electricity production and the high share of biofuel used in the mill's boilers.

The EU's Renewable Energy Directive sets member states a binding collective target to realise 20% of their final energy consumption from renewable sources by 2020. This can be expected to increase global demand for biomass. With its high proportion of biomass-based energy, the forest industry can help EU countries reach their national renewable energy targets.

## Our policies

### Steering our energy use

Stora Enso's energy use is based on long-term needs, and is steered by our Energy Guidelines. In addition to steering our energy procurement and energy generation choices, these guidelines also promote a wider corporate culture of responsible energy management.

### How we work

### Supply based on long-term contracts

The most energy intensive phases in Stora Enso's value chain are our pulp, paper, and board production processes. It is therefore essential that our mills have access to a reliable energy supply at a reasonable cost. Stora Enso's energy supply is managed under long-term contracts, direct market access through energy exchanges, efficient combined heat and power production, and shareholdings in power generation companies such as Pohjolan Voima Oy and Teollisuuden Voima Oy in Finland. For more information on these partnerships see our [Financial Report \(Note 31\)](#).

Stora Enso is committed to continuous improvements in energy efficiency and energy self-sufficiency. Investments are made to enable flexibility regarding the use of biomass fuels or other CO<sub>2</sub>-efficient options.



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### Structured energy management

Stora Enso follows a structured approach to energy management. Our Energy Services team is responsible for procuring energy, including hedging of energy prices, managing the sales of emission rights, consulting the mills in relation to energy procurement, trading in green certificates, following our carbon dioxide (CO<sub>2</sub>) allowance balance, and monitoring energy legislation. The team also ensures that our energy efficiency strategy is implemented.

The main buyer of biofuels is our Wood Supply organisation, whereas each mill is individually responsible for the procurement of other fuels. Each mill is responsible for optimising their energy efficiency using internal tools, certified environmental and energy management systems, and the support of our energy efficiency teams.

Sachsen, Nymölla, Veitsiluoto, Heinola, and Oulu mills monitor energy efficiency online in real time. All of our pulp, paper, and board mills are part of an energy efficiency best practice network.

### Progress

#### Internal energy production based on biomass

Our group-wide target is to reduce specific electricity and heat consumption per tonne of pulp, paper, and board production by 15% by 2020, compared with the baseline year of 2010. In 2015 this indicator was 5.7% lower than the 2010 benchmark level (3.7% in 2014).

In 2015 our total energy self-sufficiency figure was 62% (61%). The share of biomass in internal energy production was 81% (79%).

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#### Energy efficiency with a human touch

In 2015 Stora Enso’s pulp, paper and board mills in Sweden adopted the “Lean” approach to improve energy efficiency. Lean is a working method that focuses on running processes with stable flow patterns to add value and reduce waste. By the end of the year the Lean approach had generated significant energy savings in our Swedish mills.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)



In 2015 our electricity self-sufficiency level remained stable at 39%. Some 81% (80%) of our purchased electricity was generated from low-carbon sources including nuclear and renewable energy. Existing contracts and our internal electricity generation capacity are estimated to cover around 80% of our needs for the next five years (80% in 2014).

Energy accounted for 10% of Stora Enso’s variable costs in 2015 (12% in 2014).

#### Continuous improvement

During 2015 Stora Enso continued to improve energy efficiency throughout the group’s operations:

All of our Finnish paper, board, pulp and sawmills were successfully audited for the ISO 50001 energy management system, as were our sawmills at Ybbs and Bad St. Leonhard in Austria, Pfarrkirchen in Germany, Alytus in Lithuania, and Zdírec in the Czech Republic.

At the end of 2015 altogether 36 of our European mills were certified to the ISO 50001 system.

During 2015 our online energy efficiency tool was adopted at Nymölla paper mill in Sweden.

Arapoti paper mill in Brazil carried out a number of energy optimisation actions in its pulp and paper production processes. Combined with earlier actions, these reduced the mill’s specific electricity and heat consumption per unit of sales production to a level 6.4% lower compared to the baseline year 2010.



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### Our energy efficiency fund

Another cornerstone of our continuous energy efficiency work is a central energy efficiency investment fund. In 2015 this fund was valued at EUR 11 million (EUR 10 million in 2014) earmarked for use in our mills' energy efficiency work. It supported 32 (43) projects during the year, including an upgrade of Skutskär pulp mill's recovery boiler, enabling it to run on pitch oil instead of fossil fuels; the upgrading of Ostrołęka Mill's wastewater treatment plant to utilise more efficient tube diffusers; and the utilisation of excess heat from Anjala Mill's boiler in the mill's production processes.

When in full effect, the projects financed in 2015 should generate reductions in energy consumption totalling at least 290 GWh per year (38 GWh electricity and 252 GWh heat). These figures are equivalent to 0.3% of our annual electricity consumption and 0.7% of our annual heat consumption.

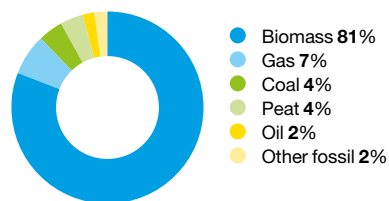
### Emissions to air

Our atmospheric emissions mainly result from the combustion of fuels used in energy generation. These emissions include carbon dioxide (CO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and fine particles.

We are working to reduce our emissions to air by using more renewable energy and by improving our energy efficiency. SO<sub>2</sub> and NO<sub>x</sub> emissions, which affect air quality and cause acid rain and soil acidification, are also controlled through advanced technologies such as scrubbers and boiler process control systems.

In 2015 our SO<sub>2</sub> emissions amounted to 3.7 thousand tonnes (4.1 thousand tonnes in 2014), NO<sub>x</sub> emissions totalled 11.0 thousand tonnes (10.9 thousand tonnes), and emissions of fine particles amounted to 1.8 thousand tonnes (1.8 thousand tonnes).

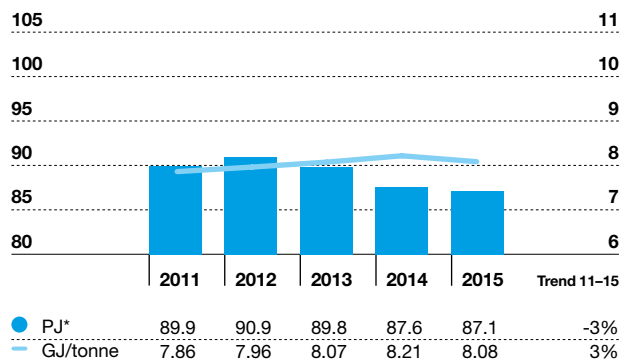
### Fuels<sup>1</sup>



Our total annual fuel consumption was 148 550 terajoules (TJ) in 2015 (149 681 TJ in 2014). 1 TJ = 10<sup>12</sup> joules.

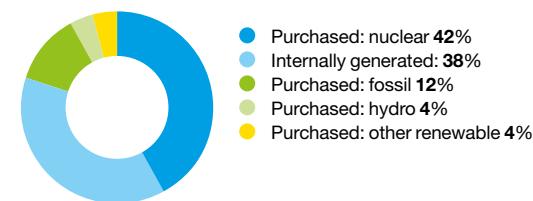
<sup>1</sup> Figures cover pulp, paper and board production units. Normalised figures are reported per unit of sales production.

### Heat consumption<sup>1 2 3</sup>



<sup>1</sup> Figures cover pulp, paper and board production units. Normalised figures are reported per unit of sales production.  
<sup>2</sup> Excluding heat used for electricity generation.  
<sup>3</sup> Historical figures recalculated due to changes in baseline following divestments or reporting errors.  
 \* 1 PJ = 10<sup>15</sup> joules.

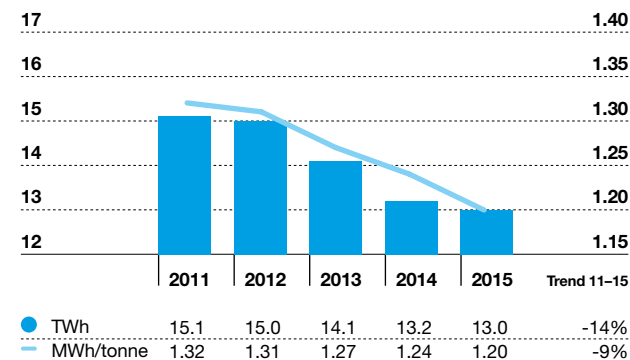
### Electricity<sup>1</sup>



During 2015 we generated and purchased 13.4 terawatt hours (TWh) of electricity and consumed 13.0 TWh (13.5 and 13.2 during 2014). 0.5 TWh was sold (0.4). TWh (terawatt hour) = 10<sup>9</sup> kilowatt hours.

<sup>1</sup> Figures cover pulp, paper and board production units. Normalised figures are reported per unit of sales production.

### Electricity consumption<sup>1 2</sup>



<sup>1</sup> Figures cover pulp, paper and board production units. Normalised figures are reported per unit of sales production.  
<sup>2</sup> Historical figures recalculated due to changes in baseline following divestments or reporting errors.

# Combating global warming

We constantly work to reduce fossil carbon dioxide (CO<sub>2</sub>) emissions within our operations. The most effective ways for us to do this are to further improve our energy efficiency, and to keep increasing the share of biomass in our total energy use.



## Opportunities and challenges

### Creating value with renewable materials

Carbon dioxide is the primary greenhouse gas causing global warming. Our products are based on renewable materials with a comparatively low carbon footprint. They help our customers and society at large to reduce CO<sub>2</sub> emissions by providing alternatives to solutions based on fossil fuels and other non-renewable materials.

The European Union's (EU) Emissions Trading System (ETS) is the biggest international system for trading greenhouse gas emission allowances, and one of the EU's efforts to combat global warming. The ETS grants "carbon leakage" status to industries where it is considered that costs related to climate policies might cause businesses to transfer production to countries with less demanding requirements to reduce greenhouse gas emissions. The forest industry currently has carbon leakage status for the period 2015–2019. Plans for the period beyond 2020 are being considered within the EU, with possible implications for the forest industry.

The EU's Climate and Energy Package, a set of binding legislation aiming to ensure that the EU meets its climate and energy targets for 2020, can be expected to increase demand for biomass. It will also indirectly increase energy generation costs for our electricity suppliers when emission allowances have been completely purchased.

Physical problems resulting from global warming, such as the increasing frequency of

extreme weather events like storms, flooding and droughts, or changes in seasonal climatic conditions, can also be expected to affect our operations directly and indirectly.

On the other hand, sustainable forest management plays a vital role in mitigating global warming. Trees absorb CO<sub>2</sub> from the atmosphere and together with wood-based products act as carbon sinks. If forests and plantations are managed sustainably, new generations of trees will grow back after mature trees are logged, sequestering more CO<sub>2</sub> from the atmosphere.

The Paris Climate Conference (COP 21) in December 2015 approved the first universal climate agreement, with 195 countries committing to the target of keeping the global rise in temperature below 2°C. Stora Enso welcomes this agreement as an important milestone in sustainable global development. As a renewable materials company we have a solid base to build on for a low-carbon economy. As part of Stora Enso's wider strategy to combat global warming, we are committed to a science-based CO<sub>2</sub> reduction target. For more information on our COP 21 actions see [pages 9–10](#).

# -35%

Our target is to reduce our fossil CO<sub>2</sub> emissions per saleable tonne of pulp, paper and board by 35% by the end of 2025 from a 2006 baseline.

## Our policies

### New carbon strategy framework defined

In 2015 Stora Enso defined a group-level carbon strategy framework for assessing and building on our current position, which is the result of actions taken since the early 2000s. We aim to expand on this strategy during 2016. Other relevant policies include:

- Stora Enso's current Statement on Climate Change, which includes a target to reduce fossil CO<sub>2</sub> emissions per saleable tonne of pulp, paper, and board by 35% by the end of 2025 from a 2006 baseline. This target is periodically adjusted to take into account the changing shape of the company.
- Supplier Code of Conduct and Practical Guide for Suppliers, which give guidance on how CO<sub>2</sub> emissions can be reduced in our supply chain.

## How we work

### Improving our energy efficiency

Carbon dioxide is the most important greenhouse gas generated by our operations. Most of our CO<sub>2</sub> emissions come from the energy we purchase at our mills. The most effective ways to reduce our direct fossil CO<sub>2</sub> emissions are to further improve our energy efficiency, and to keep increasing the use of biomass fuels. For more information on our energy use see [pages 51–53](#).

Our production units systematically work to meet their environmental regulatory requirements and to improve their energy efficiency. Their work is supported by international third-party-certified systems such as the environmental management standard ISO 14001 and the energy management standard ISO 50001.

Stora Enso evaluates risks and opportunities related to global warming through the Enterprise Risk Management (ERM) process, which forms an integral part of the group's management approach (for more details see our [Progress Book](#)). We also routinely calculate the financial impacts of potential cost increases in relation to emission allowances, including the financial impacts on our business in case of consequent increases in energy prices.

### Carbon reporting

We publicly report on our greenhouse gas (GHG) emissions in three categories:

- Emissions from sources we directly own or control, including on-site energy generation and processes, power boilers, lime kilns, vehicles and engines (**scope 1**)
- Emissions related to the purchased electricity and heat consumed in our operations (**scope 2**)
- Emissions from other indirect sources along our value chain, reported as CO<sub>2</sub> equivalent estimates (**scope 3**).

Our pulp, paper and board mills report carbon emissions monthly for scopes 1 and 2, while sawmills and converting facilities report annually.<sup>1</sup> A group-level estimate for scope 3 emissions is updated biannually. Our carbon footprint accounting is based on guidelines provided by the Greenhouse Gas Protocol of the World Resource Institute and the World Business Council for Sustainable Development. During 2015 we improved the external assurance of our direct and indirect fossil CO<sub>2</sub> emissions (scopes 1 and 2) by moving from limited assurance to reasonable assurance. For more details see [page 70](#).

<sup>1</sup> The CO<sub>2</sub> factors we use for purchased energy (scope 2) largely follow market based methodology, meaning that almost all of our units apply CO<sub>2</sub> factors provided by their energy suppliers, instead of average factors for the countries of operation.

We have also implemented methodologies for calculating the quantities of carbon sequestered in forests and plantations owned and managed by Stora Enso and our associate companies.

### Carbon Disclosure Project (CDP)

Stora Enso was included for the sixth consecutive year in the Carbon Disclosure Project's (CDP) Nordic Carbon Disclosure Leadership Index (CDLI) in 2015 for our group-level reporting on carbon emissions.





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## In 2015, 76% of the total CO<sub>2</sub> emissions from our own operations were from biogenic sources.

Company disclosures to CDP are rated on a scale of 0 to 100, and Stora Enso scored 99 in 2015. This annual index highlights companies listed on Nordic stock exchanges who have demonstrated a robust approach to the disclosure of information regarding global warming. Our full response to the annual CDP Climate questionnaire is available on [our website](#).

During 2015 Stora Enso participated in the CDP's programmes on Climate Change, Forests, and Water.

### Emissions from our logistics operations

The carbon dioxide emissions generated during the transportation of our raw materials and products are the most significant environmental impacts associated with our logistical operations, which are mainly performed by external logistics service providers. Their other impacts include traffic and noise, as well as emissions of sulphur compounds, nitrogen oxides and particles.

### Progress

#### Reducing our carbon dioxide intensity

Since 2007, our target has been to reduce our fossil CO<sub>2</sub> emissions per saleable tonne of pulp, paper, and board by 35% from 2006 levels by the end of 2025. This CO<sub>2</sub> intensity target covers both emissions generated directly

by our own facilities, and indirect emissions produced during the generation of the electricity and heat we purchase (scopes 1 and 2). In 2015 our CO<sub>2</sub> emissions per saleable tonne of pulp, paper, and board were 32% lower than the 2006 benchmark level (29% in 2014).

Large reductions in our CO<sub>2</sub> intensity in previous years have been achieved through investments in multi-fuel boilers that have reduced our use of fossil fuels, and through increased efficiency in our internal production of power and heat. Other contributing factors have included improved productivity, the use of more efficient equipment, and streamlined processes. For instance, a successful investment at Enocell in 2014 enabled about 85% of the fossil fuel oil used in the lime kiln to be replaced by sawdust. This helped to reduce the mill's annual fossil CO<sub>2</sub> emissions by 49% in 2015.

On the other hand, the group's CO<sub>2</sub> intensity has been adversely affected by the use of fossil fuels at our Ostrołęka Mill in Poland, where energy price trends have not favoured the use of biomass-based fuels.

In 2015 our direct fossil CO<sub>2</sub> emissions decreased both in absolute terms and per unit of sales production. Fossil CO<sub>2</sub> emissions per unit of sales production decreased in our Consumer Board, Paper, and Biomaterials divisions, improving the group's performance.

The direct and indirect fossil CO<sub>2</sub> emissions from all of our production units amounted to 3.95 million tonnes in 2015 (4.07 million tonnes).

Our indirect CO<sub>2</sub> emissions are significantly influenced by the energy mixes used in the national grids of the countries where we operate. The fossil CO<sub>2</sub> emissions resulting from the generation of the energy we purchased for electricity and heat during 2015 were 46% lower than in 2006 (45% lower).

Twelve of Stora Enso's mills are currently linked to local district heating systems. In most cases the heat supplied from our production units directly reduces the use of oil and other fossil fuels in these localities. In 2015 a total of 5 million GJ of heat was sold to these district heating

### Signing the Paris Pledge to support global climate agreement

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In the wake of the new inter-governmental climate agreement, non-state actors are also showing their support for climate action. The Paris Pledge for Action is a unique way for businesses, investors, cities, and other organisations to pledge their commitment to the goals of the agreement. Stora Enso is among the more than 800 organisations who have signed the Paris Pledge for Action.

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systems. Using this amount of renewable energy instead of light fuel oil for heating results in estimated emission reductions amounting to 375 000 tonnes of CO<sub>2</sub>.

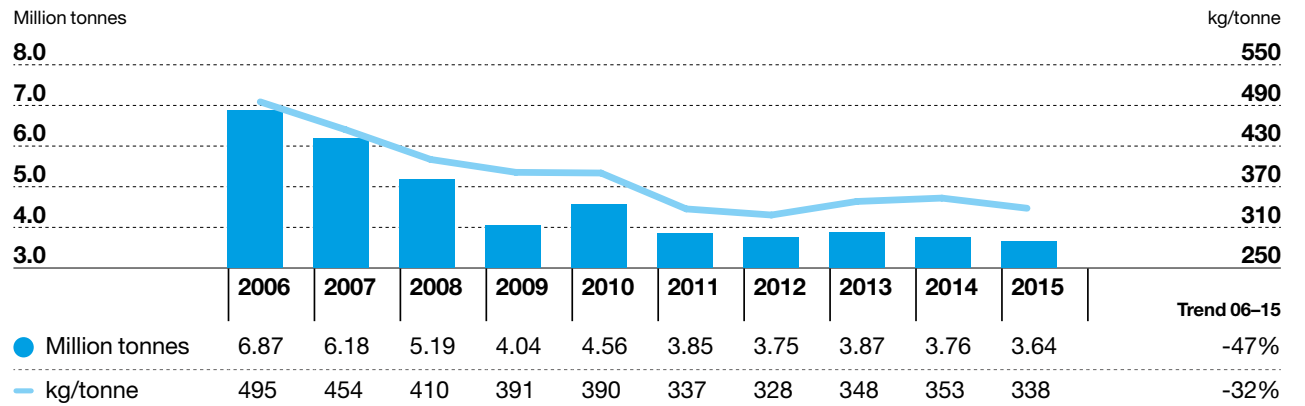
**Biogenic emissions**

Biogenic CO<sub>2</sub> emissions are fossil-free emissions generated during the combustion of biomass-based fuels. Biogenic CO<sub>2</sub> emissions are considered carbon neutral when the biomass fuel comes from sustainably managed forests. Stora Enso's operations utilise renewable biomass-based fuels to a large extent, so the share of biogenic CO<sub>2</sub> emissions in our total emissions is high. In 2015 76% (75%) of the total CO<sub>2</sub> emissions (biogenic CO<sub>2</sub>, scope 1 and scope 2) from our operations were from biogenic sources.

**Our carbon footprint**

The direct emissions from our operations account for 21% (23% in 2014) of our carbon footprint, while emissions related to the energy we purchase for use in our operations account for 15% (15%) of our total carbon emissions. The majority of the emissions in our carbon footprint – 64% (62%) – are generated elsewhere along the value chain, such as in the sourcing and manufacturing of our raw materials and services (36%); the further processing of our products by customers (35%); and the transportation of raw materials to our mills and our final products to our customers (23%).

**Our fossil CO<sub>2</sub> emissions<sup>1</sup>**



<sup>1</sup> Covering direct and indirect fossil CO<sub>2</sub> emissions (scopes 1 and 2) from pulp, paper and board production units. Normalised figures are reported per unit of sales production. Historical figures recalculated due to changes in baseline following divestments or reporting errors.

**Total carbon footprint 2011–2015<sup>1 2</sup>**

Emission source		Fossil CO <sub>2</sub> equivalent (million tonnes)				
		2015	2014	2013	2012	2011
Stationary and mobile combustion sources (direct) <sup>3</sup>	Scope 1	2.36	2.49	2.50	2.40	2.61
Purchased electricity and heat (indirect)	Scope 2	1.72	1.71	1.82	1.80	1.71
Other sources (indirect)	Scope 3	7.20	7.12	7.38	7.60	7.61
		11.28	11.32	11.70	11.80	11.93

<sup>1</sup> Covers all Stora Enso production units.

<sup>2</sup> Figures recalculated due to changes in baseline or reporting errors.

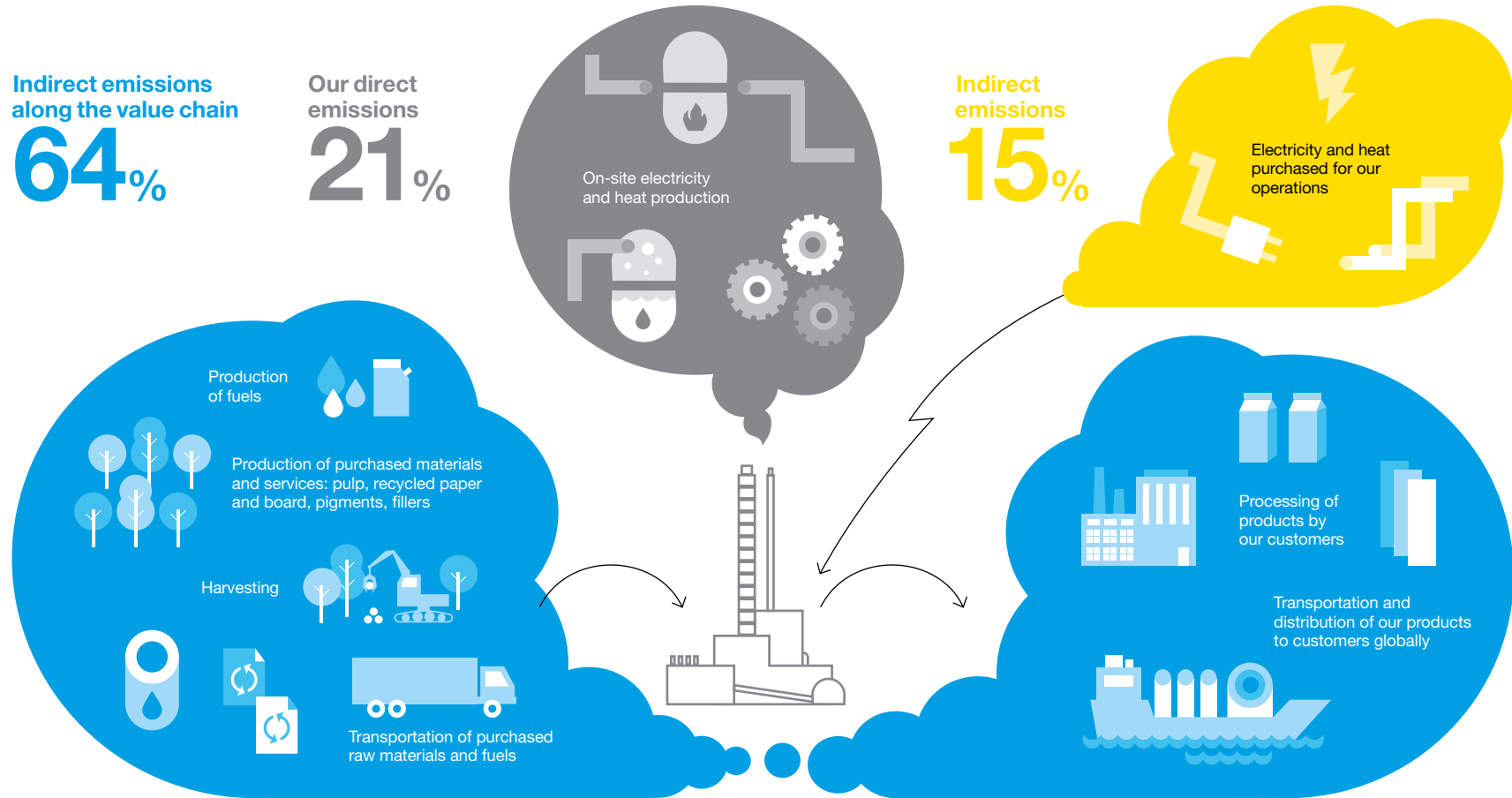
<sup>3</sup> CO<sub>2</sub> equivalent includes also other greenhouse gases in addition to CO<sub>2</sub>. 95% of our greenhouse gases under scope 1 are CO<sub>2</sub>, the rest are methane and nitrous oxide (N<sub>2</sub>O).

# Stora Enso's carbon footprint<sup>1</sup>

Indirect emissions along the value chain  
**64%**

Our direct emissions  
**21%**

Indirect emissions  
**15%**



- Scope 1: Direct emissions from our operations.
- Scope 2: Emissions related to purchased energy consumed in our operations.
- Scope 3: Emissions from other sources along our value chain.

<sup>1</sup> Covers all Stora Enso production units, a total of 11.28 million tonnes of fossil CO<sub>2</sub> equivalent.



# Materials

As a renewable materials company, Stora Enso's business model aligns well with the concept of a bioeconomy, offering sustainable alternatives to fossil-based materials.



## Opportunities and challenges

### Making more from less

Since our products are based on a raw material that is renewable and reusable they offer favourable alternatives to fossil-based goods. To keep us in the forefront of the developing bioeconomy we focus on innovation linked to biochemistry and biomaterials.

Stora Enso's operations also support the concept of a "circular economy", where materials are repeatedly recycled and waste generation is minimised, creating maximum environmental and financial added value. Our material efficiency work promotes the efficient use of raw materials, waste reduction, the reuse of fibre, and the creation of business opportunities and revenues from wastes and by-products.

Approximately two-thirds of packaging materials used globally are produced from non-renewable raw materials. Increasing eco-awareness among consumers results in growth opportunities for businesses, who use renewable raw materials. At the same time the increasing global demand for natural resources may be reflected in changing environmental requirements and costs in relation to our key raw materials, creating challenges that we need to address.

Wider trends in waste management, such as reuse and recycling, are key factors that enable Stora Enso to successfully contribute to shaping a circular economy. The supply of sustainable raw materials, including both recycled and virgin fibre, is a key factor for the company throughout the value chain and in all markets.

## Our policies

### Guidance throughout the value chain

Policies relevant to materials include:

- Policy on Wood and Fibre Sourcing, and Land Management, which guides our work in forestry and land use, ensuring the origin of the wood we procure.
- Supplier Code of Conduct, Practical Guide for Suppliers and Purchasers' Guidance, which support the responsible sourcing of various raw materials used in our production.

### How we work

### Improving material efficiency

Wood is the main raw material in Stora Enso's production processes. Virgin fibre is used for the production of all packaging materials used for sensitive products such as food, toys, and pharmaceuticals and for several paper grades. For more information about our wood procurement see [pages 43–49](#).

Seven of Stora Enso's mills currently use paper for recycling (PFR) as raw material. Recycled newspapers and magazines are used to produce certain paper grades at Langerbrugge Mill in Belgium (where they account for 100% of sourced fibre), Sachsen (100%) and Maxau (75%) in Germany, Hylte in Sweden (50%), and Dawang in China (100%). Recovered board is used in certain containerboard grades at Varkaus Mill in Finland and at Ostrołęka in Poland (85%).

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During 2015 Stora Enso additionally used PfR at Heinola Mill in Finland and Barcelona Mill in Spain (100%). In October Stora Enso completed the divestment of Barcelona Mill to the private equity fund Quantum.

Through contracts with local authorities, waste management companies, and by running our own collection facilities, we secure viable volumes of used paper and board for reuse as raw material. On top of the material originating from households, Stora Enso uses paper from industrial and commercial sources such as printers and retailers in some regions. In Poland, Stora Enso runs its own network of more than 20 depots, where board is collected and baled for transportation to our containerboard mill at Ostrołęka.

Europe's PfR collection rate has been high for many years, reaching a level of about 72% in 2014. This is a noteworthy achievement, especially since the European Recovered Paper Council (ERPC) estimates that 22% of all

paper is of grades that cannot be recycled, such as tissue paper. This nevertheless means that 6% more paper could still be recovered, and Stora Enso and the paper industry are actively collaborating to find ways to further increase the recycling rate.

**Reusing waste and by-products**

Stora Enso's production processes generate various by-products and wastes, including black liquor, bark, wastewater treatment sludge, and different kinds of sludge generated during pulp and paper production. Many of the materials are used for our internal bioenergy generation and pulp production, or supplied to our partners for agricultural purposes, brick manufacturing, or road construction. We constantly look for innovative ways to reuse materials that would otherwise end up as wastes.

We dispose of hazardous wastes by ensuring that they are safely processed at suitable waste facilities or

incinerators, and we report on their disposal in line with respective national regulations.

Our mills' third-party-certified ISO 14001 systems form part of the on-site management procedures for the handling of chemicals and waste. Knowledge and best practices related to optimising material flows are shared through divisional and regional expert networks including our Environment, PfR, Chemical Safety and Product Safety Networks.

We are currently reviewing our approach to material efficiency, and new key performance indicators (KPIs) will be defined during 2016.

**Progress**

**Waste reuse rate nearly 100%**

In 2015 the group's revenues derived from wastes and residuals, including tall oil amounted to EUR 83 million (EUR 77 million in 2014). The waste and residuals reuse rate across the group was 98% (98%), covering internal and external reuse.

Hazardous wastes from our production include used oils, solvents, paints, laboratory chemicals, and batteries. In 2015 Stora Enso's production units generated a total of 3 574 tonnes of hazardous waste, slightly up from 3 422 tonnes in 2014. In addition, 9 517 tonnes of sludge classified as hazardous waste was generated at the disused Falun Copper Mine in Sweden, for which Stora Enso is liable (8 871 tonnes in 2014). The sludge is generated while removing metals from mine drainage water.

Stora Enso used 2.1 million tonnes of paper for recycling (PfR) in 2015 (2.5 million tonnes in 2014), making us one of the largest single PfR consumers in Europe. In 2015 the utilisation rate of PfR in our paper and board production was 24% (26% in 2014). The 2015 figures exclude the divested Barcelona Mill.

**Lignin – fractions of tomorrow**

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Stora Enso has been focusing on lignin extraction from wood as a door opener in transforming the pulp industry. The company's Sunila Mill in Finland is the world's first integrated lignin extraction plant producing dry kraft lignin. The lignin is burned in the mill's lime kiln reducing the mill's fossil CO<sub>2</sub> emissions.

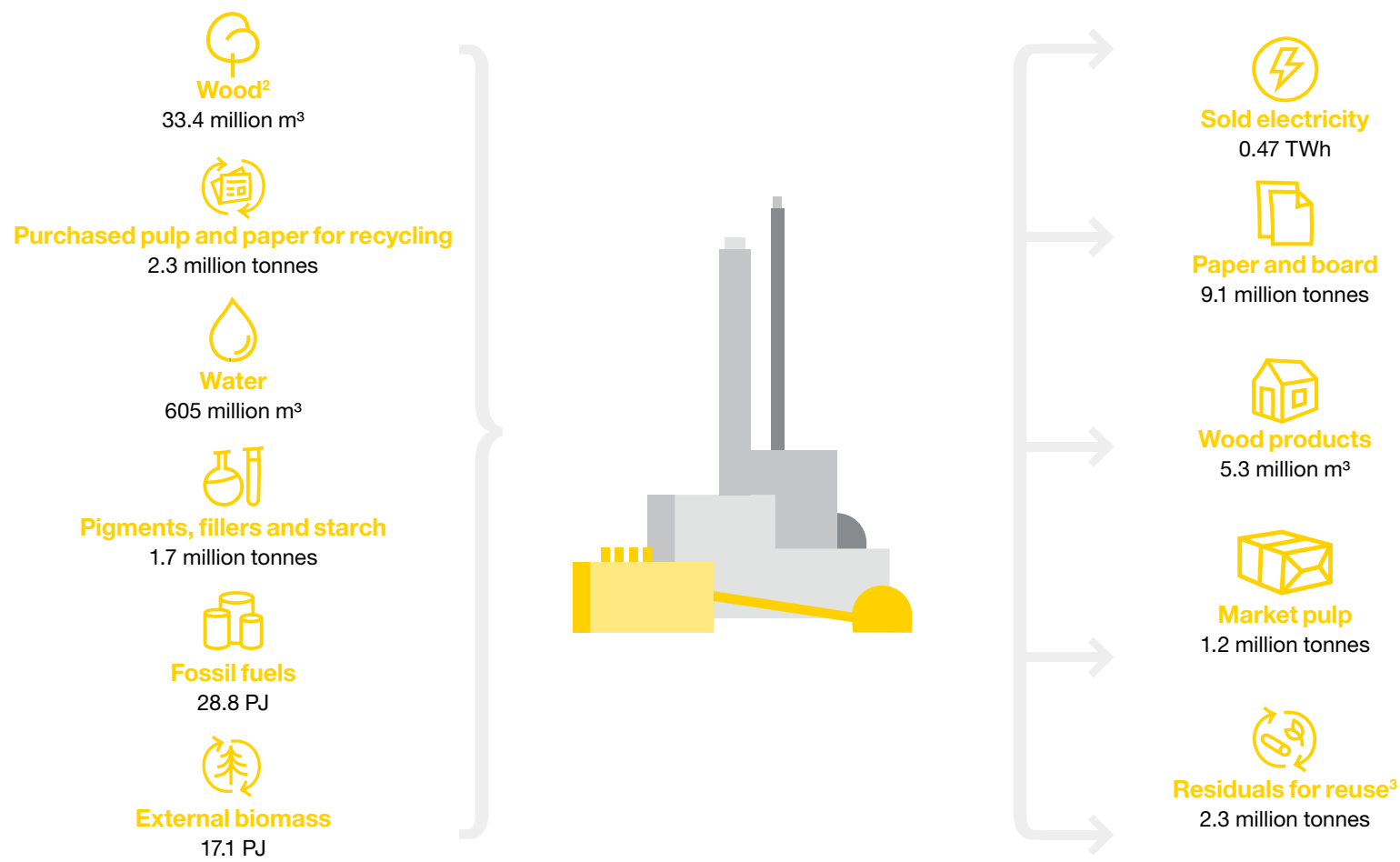
In terms of potential markets, refined lignin can be used in the production of adhesives and resins, coatings, specialty chemicals, and many other products.

Read the full article at [storaenso.com/lignin-of-tomorrow](http://storaenso.com/lignin-of-tomorrow)



# Material use in 2015<sup>1</sup>

- Governance
- People and Ethics
- Forestry and Land Use
- Environment and Efficiency
- Data and Assurance



<sup>1</sup> Covers all Stora Enso production units.

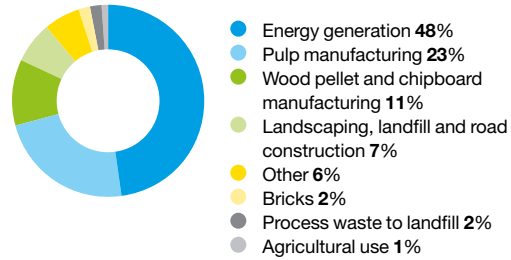
<sup>2</sup> Excludes wood use by 50%-owned joint operations Veracel and Montes del Plata.

<sup>3</sup> Residuals include by-products, waste, and other beneficially used sidestreams.

The illustration shows the key materials used in our processes, together with our production figures for 2015. For a comprehensive view on how we create value for society see our [Progress Book](#).



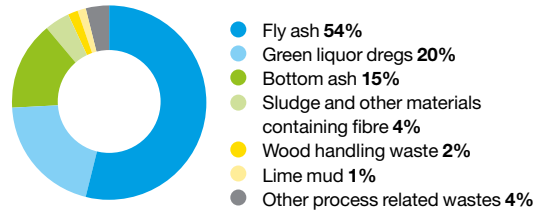
**Utilisation of process waste and residual materials<sup>1</sup>**



<sup>1</sup> Covers all Stora Enso production units, as dry tonnes.

**Process waste to landfill<sup>1</sup>**

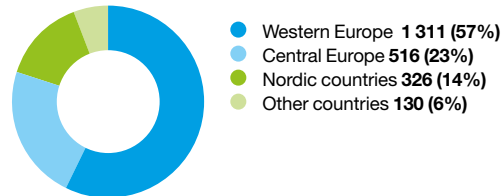
77 710 tonnes



<sup>1</sup> Covers all Stora Enso production units. In addition to process waste to landfill Stora Enso's production units created a total of 5 705 tonnes of non-process waste and 51 572 tonnes of waste sent to on-site storage facilities.

**Paper for recycling: procurement by origin**

thousand tonnes<sup>1</sup>



<sup>1</sup> As delivered to our mills.



# Water

Water availability is one of the greatest challenges affecting living conditions on our planet. We strive to reduce the amounts of water used in our production.



## Opportunities and challenges

### A global concern with local solutions

Water plays a central role in Stora Enso's production processes, since the structure of paper and board is dependent on the use of clean water. Water is also used for cooling machinery at the mills, for cleaning, as a carrier of energy in the form of steam, and as a medium to carry fibres through production processes. Water also plays a key role in creating the electricity we use and purchase, particularly in hydropower plants.

Water-related concerns are global, but their impacts and solutions are local. Almost all of our production units are located in regions where water is a relatively abundant resource, and we can safely use water directly sourced from lakes and rivers. However, the increasing global demand for water may in the long-term impact our operations through our supply chains.

As interest in global water scarcity increases, possible new policies and legislation regulating nutrient pollution, water recycling, water prices, and the safe reuse of treated wastewater. In addition, the rising demand for the consumption and reuse of water may be reflected in new requirements for industrial water use.

Many of our planet's water bodies are polluted with toxic substances and non-biodegradable materials. Stora Enso's renewable, recyclable, and biodegradable products offer safe alternatives to products with more harmful impacts.

## Our policies

### A comprehensive approach to water management

Policies relevant to water include:

- Statement on Water and Water Use, which reflects the company's current position and activities
- Code of Conduct, which provides guidance on issues related to water use
- Supplier Code of Conduct and Practical Guide for Suppliers, which provide guidance on issues related to water in our supply chain
- Policy on Wood and Fibre Sourcing, and Land Management, which provides guidance on how water issues are integrated into our sustainable forest management and the land use practices we follow in plantations and forests.

**Some 4% of the total volume of water we withdraw is consumed in production processes while almost 96% is recycled back to the environment.**



How we work

Protecting water through cooperation with stakeholders

Our water use is regulated by the relevant authorities based on local conditions and operational permits, with limits set through each mill's environmental permit processes. Our mills' water management is supported by third-party-certified management systems, such as ISO 14001.

Even if Stora Enso withdraws relatively great amounts of water, only some 4% of the total volume of water we withdraw is consumed in our production processes, while almost 96% is recycled back to the environment. The water is released after being carefully purified in our treatment plants (process water), or without treatment (cooling water).

Stora Enso is committed to use high-performing wastewater treatment systems to ensure that the water we release is ecologically safe and meets all regulatory requirements. Our water treatment systems also recycle water within our mills where feasible, reducing the need for water intake. Reducing the water demand of our mills also helps to improve the energy and material efficiency of our production.

We apply the Global Water Tool devised by the World Business Council for Sustainable Development to assess water-related risks at our production units, and actively follow water footprint methodology developed by researchers and standardisation bodies. We also assess the impacts of the EU's Best Available Technique (BAT) reference documents (BREFs) in relation to our effluent releases.

During 2016 Stora Enso will review the company's approach to water use as part of the review of our sustainability strategy. We will aim to address water topics more comprehensively with the help of a locally focused approach.

Progress

Working to reduce process water discharges

Our two water-related targets and key performance indicators (KPIs) aimed to reduce process water discharges and chemical oxygen demand (COD) levels in discharged water per saleable tonne of pulp, paper and board from 2005 and 2007 benchmark levels. These targets and KPIs expired in 2015.

In 2015 normalised process water discharges were 2% lower than in 2005 (3% in 2014) and normalised discharges of COD were 3% lower than the 2007 baseline level (5% in 2014).

COD levels and the volumes of process water discharges were affected by weak related performance at some of our largest mills during the year, and the targets were not reached. The weak performance on normalised process water discharges was mainly due to Imatra Mill's production problems during the third quarter, and repair work on wastewater aerators at Nymölla Mill during the year.

In 2015 our normalised discharges of nitrogen decreased, but normalised discharges of phosphorus increased. Normalised discharges of absorbable organic halogen compounds (AOX) remained at a level representing good performance.<sup>1</sup>

Local water initiatives

In 2015 we continued to actively participate in international and local initiatives related to water in our operations and the surrounding communities. Arapoti Mill in Brazil implemented comprehensive energy-saving measures that also resulted in an 8% reduction in process water discharges per tonne of paper produced, compared to a 2005 baseline.

Skoghall Mill in Sweden piloted a project run by the Alliance for Beverage Cartons and the Environment (ACE) to develop an industry-specific add-on to the WWF's Water Risk Filter tool (WRF). This tool is designed to help companies and investors assess and mitigate potential water-related risks.

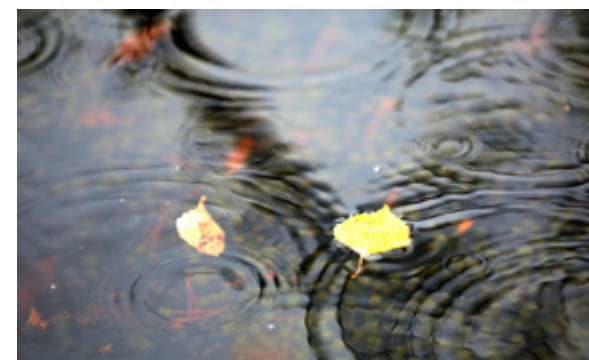
Stora Enso and the chemicals company Kemira completed a joint water management project in three rural villages in Guangxi, China. For more details of this project and its results see [pages 23–24](#).



A perfect match of wastewaters

Blending wastewater streams from Stora Enso's Kabel paper mill in Germany and four surrounding municipalities has resulted in valuable synergies: no nutrients need to be added in the wastewater treatment process. This unique collaboration helps to make the River Ruhr cleaner.

Read the full article at [storaenso.com/sustainability](http://storaenso.com/sustainability)



<sup>1</sup> AOX figures relate to the amounts of chlorine or other halogens that end up bound to organic matter in wastewater. Since Stora Enso stopped using elemental chlorine in chemical pulp bleaching processes in the early 1990s, our discharges of AOX have fluctuated within a range representing good performance.



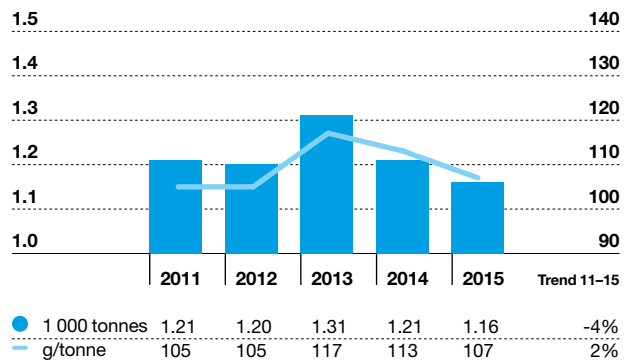
**Water withdrawal and consumption<sup>1 2</sup>**

	2011	2012	2013	2014	2015	Trend 11-15
<b>Total water withdrawal (million m<sup>3</sup>)</b>						
Process water	304	301	297	299	318	5%
Cooling water	362	320	334	323	283	-22%
<b>Total</b>	<b>666</b>	<b>621</b>	<b>631</b>	<b>622</b>	<b>601</b>	<b>-10%</b>
<b>Process water withdrawal efficiency</b>						
m <sup>3</sup> /tonne	26.6	26.3	26.7	28	29.5	11%
<b>Total water consumption</b>						
million m <sup>3</sup>	26.1	24.7	26.1	25.3	22.9	-12%
m <sup>3</sup> /tonne	2.3	2.2	2.3	2.4	2.1	-9%
<b>Process water discharges</b>						
million m <sup>3</sup>	290	285	280	276	282	-3%
m <sup>3</sup> /tonne	25.4	24.9	25.2	25.8	26.1	3%

<sup>1</sup> Figures from pulp, paper and board production units. Normalised figures are reported per unit of sales production.

<sup>2</sup> Figures have been recalculated due to changes in baseline or reporting errors.

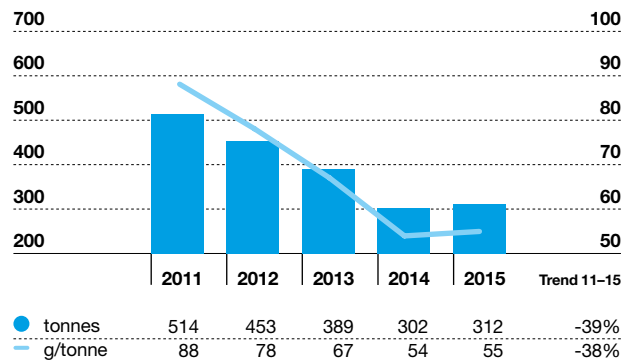
**Nitrogen<sup>1 2</sup>**



<sup>1</sup> Figures from pulp, paper and board production units. Normalised figures are reported per unit of sales production.

<sup>2</sup> Historical figures recalculated due to changes in baseline following divestments or reporting errors.

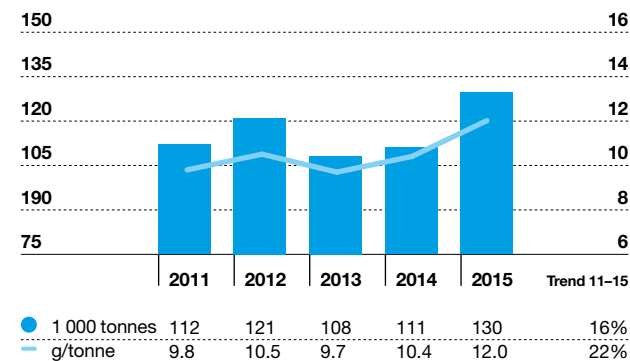
**Adsorbable organic halogen compounds (AOX)<sup>1 2</sup>**



<sup>1</sup> Figures from bleached chemical pulp production units only. Normalised figures are reported per unit of bleached chemical pulp production.

<sup>2</sup> Historical figures recalculated due to changes in baseline following divestments or reporting errors.

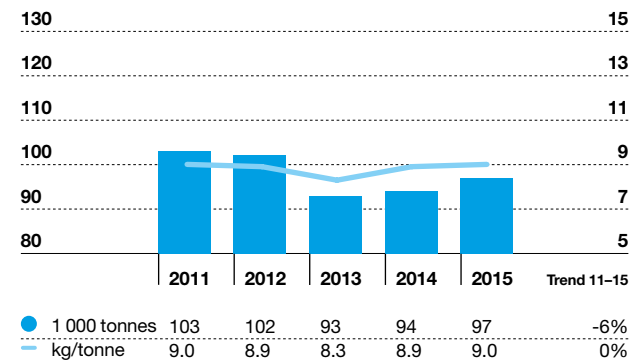
**Phosphorus<sup>1 2</sup>**



<sup>1</sup> Figures from pulp, paper and board production units. Normalised figures are reported per unit of sales production.

<sup>2</sup> Historical figures recalculated due to changes in baseline following divestments or reporting errors.

**Chemical oxygen demand (COD)<sup>1 2</sup>**



<sup>1</sup> Figures from pulp, paper and board production units. Normalised figures are reported per unit of sales production.

<sup>2</sup> Historical figures recalculated due to changes in baseline following divestments or reporting errors.

# Environmental incidents in 2015

The list gives details of non-compliances with environmental legal requirements that occurred at our production units during 2015. Joint venture operations are excluded from the list.

Unit	Incident	Corrective actions
<b>Enocell pulp mill, Finland</b>	The mill's monthly permit limit for phosphorus was slightly exceeded in August 2015. Enocell's phosphorous permit limits are 15 kg/day and the level in August was 15.4 kg/day.	A new mechanism for adding urea to the process has been installed. No requirements were imposed by the authorities.
<b>Ostrołęka corrugated plant, Poland</b>	Water contaminated with printing ink leaked into a rainwater sewer due to the breakdown of an effluent pump in November 2015.	The pump has been repaired, a new breakdown alarm has been installed, and special instructions have been implemented. These actions were required and accepted by the authorities.
<b>Ostrołęka kraft mill</b>	The mill's permit limits for chemical oxygen demand, total suspended solids and biological oxygen demand were exceeded in September and November 2015.	Actions have been taken to reduce the loads entering the effluent treatment plant and to improve control of the process. No requirements were imposed by the authorities.
<b>Ostrołęka paper mill</b>	Damaged bag filter elements caused the dust emissions from a circulating fluidized bed boiler (CFB) to exceed limits in November and December 2015. In addition, the mill's permit limits for chemical oxygen demand, total suspended solids, and biological oxygen demand were exceeded.	New filter elements have been installed in the CFB. Further maintenance measures that will improve the boiler's dust removal system are planned for 2016. Measures have also been taken to increase the flexibility and reliability of the effluent treatment plant. No requirements were imposed by the authorities.
<b>Sunila pulp mill, Finland</b>	The mill's two recovery boilers were exceeded their permit limits for particulate matter content in August 2015. In addition, one of the mill's recovery boilers exceeded its total reduced sulphur (TRS) permit limit for a total of 18 hours during January–August 2015.	Air leakages in one of the boilers were repaired in October 2015. Problems are expected to end in 2016 when loads in recovery boilers will be permanently lowered due to lignin extraction. TRS levels are expected to stay within permit limits due to the improved stability of operations as dust formation is reduced. No requirements were imposed by the authorities.
<b>Varkaus Mill, Finland</b>	The mill's monthly effluent limit for phosphorus was slightly exceeded in August 2015 due to maintenance work during a shutdown in paper production.	No corrective actions were needed. The supervising authority was informed before the maintenance work began, and no further actions were required.

# Data and Assurance

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Governance

People  
and Ethics

Forestry  
and Land Use

Environment  
and Efficiency

Data and  
Assurance



# External recognition

**FTSE4 Good Index**  
 Stora Enso is included in the FTSE4Good Index Series, where we have been listed since 2001. These indices have been designed to measure the performance of companies that meet globally recognised corporate responsibility standards.

**Carbon Disclosure Leadership Index**  
 Stora Enso is included for the sixth consecutive year in the Carbon Disclosure Project's (CDP) Nordic Carbon Disclosure Leadership Index (CDLI) for our reporting on carbon emissions.

**MSCI Global Sustainability and SRI Indexes**  
 Stora Enso has been a constituent of these Sustainability Index Series for more than five years. MSCI ESG indices represent the most prevalent environmental, social, and governance investment strategies, using award-winning ESG data and ratings on thousands of companies worldwide.

**RobecoSAM Sustainability Award**  
 Stora Enso has qualified for inclusion in RobecoSAM's 2016 Sustainability Yearbook with a Silver Class distinction for excellent sustainability performance. This yearbook lists the world's most sustainable companies in each industry, as determined by their scores in RobecoSAM's annual Corporate Sustainability Assessment (CSA).

**OMX GES Sustainability Finland index**  
 Stora Enso is included in the NASDAQ OMX and GES Investment Service's OMX GES Sustainability Finland index. GES Investment Services compare leading companies listed on NASDAQ OMX Helsinki with regard to their responsibility work on environmental, social and governance issues.

**STOXX Global ESG Leaders indices**  
 Stora Enso is listed for the fifth consecutive year in the STOXX Global ESG Leaders indices. These indices rate leading global companies according to environmental, social, and governance criteria.

**ECPI Ethical Indices**  
 Stora Enso is included in the ECPI Ethical indices. ECPI is dedicated sustainability research, rating, and indices.

**EcoVadis**  
 Stora Enso received the highest recognition level (Gold) in this ethical supplier rating system.

**Ethibel Investment Register**  
 Stora Enso is listed in Forum ETHIBEL's Ethibel EXCELLENCE Investment Register and Ethibel Sustainability Index (ESI) Excellence Europe. Such recognition indicates that a company performs better than average in its sector in terms of corporate social responsibility.

**Euronext Vigeo – Europe 120**  
 Stora Enso has maintained its position in the Euronext Vigeo – Europe 120 index as one of the 120 most advanced European companies in terms of environmental, social, and governance performance.

**Oekom Research**  
 Stora Enso is classified as “Prime” by Oekom Research's environmental, social, and governance rating methodology.

**The Stockholm School of Economics**  
 Stora Enso received the highest rating in a study on sustainability communication in Sweden that included all companies listed on the Nasdaq Stockholm Large Cap index. The report was commissioned by the Mistra Center for Sustainable Markets (MISUM) at the Stockholm School of Economics.

**Sustainability report review in Finland**  
 Stora Enso's Global Responsibility Performance 2014 was nominated as the best sustainability report in Finland's leading annual sustainability report review, coordinated by the Corporate Responsibility Network FIBS. The report also won sub-categories in human rights and tax footprint reporting.

**UN Global Compact 100 Stock Index**  
 Stora Enso is included in the United Nations Global Compact 100, a global stock index that combines corporate sustainability and financial performance.

# Reporting scope

At Stora Enso we regularly review the priorities in our sustainability agenda, and ensure that our reporting duly addresses them. When defining the materiality of issues impacting our sustainable business model, we consider the expectations of stakeholders inside and outside the company.

During the years 2012–2014 we conducted significant materiality assessments among our internal and external stakeholders including investors, online and traditional media, and a separate online panel set up for stakeholders from across our markets. In 2014 this panel received comments from 228 stakeholders from more than 35 countries (614 participants from 47 countries in 2013). This work formed the basis for setting our priorities for 2015. For details of our previous materiality analysis see Stora Enso's **Global Responsibility Performance 2014**.

To support our previous material reviews, we conducted a survey among our top 20 investors to assess their views on our sustainability work in 2015. A customer survey covering our top 50 customers and an independent study on sustainability reporting were also conducted during the year.

## Data boundaries

Unless otherwise stated, the group's consolidated performance data as expressed in this report covers the parent company, Stora Enso Oyj, and all companies in which we hold over 50% of voting rights directly or indirectly. The group's consolidated sustainability performance data does not cover joint operations or equity-accounted investments where Stora Enso's ownership is between 20% and 50%, or companies in which our ownership share is less than 20%.

The report does, however, describe issues directly relating to companies in which Stora Enso's ownership is 50% or below, when these issues have been identified as material considering the sustainability impacts of the group and related interest among our stakeholders. For this reason the report covers material sustainability topics relating to Stora Enso's joint operations in South America, Veracel and Montes del Plata, as well as our 35%-owned equity-accounted investment Bulleh Shah Packaging in Pakistan.

Our consolidated environmental and energy data covers our production units as of the end of the reporting period. The related historical performance has been recalculated following the removal of divested units from the baseline. Scope limitations related to specific environmental indicators are explained in footnotes. Stora Enso's sawmills and converting facilities are excluded from the group's environmental targets due to their lower materiality.

Human resources (HR) data is derived from separately collected HR statistics, except for numbers of employees, which are derived from financial accounting. Unlike in our **Progress Book** and **Financial Report**, consolidated HR data in the Sustainability Report excludes employees of our 50%-owned joint operations Montes del Plata and Veracel. All the presented HR data covers permanent and temporary employees as of 31 December 2015, except for the unit-specific numbers of employees on **pages 71–73** which are yearly averages. Certain administrative functions and sales offices are not included in the group's consolidated OHS data.

## Divestments and closures during 2015

Stora Enso completed the divestment of the specialty and coated fine paper mill at Uetersen in Germany on 18 February. The divestments of Barcelona Mill in Spain, which produces recycled-fibre based consumer board, and Komárom packaging plant in Hungary, were completed on 2 October. In addition, the group's corrugated packaging converting unit in Chennai, India, Sollenau sawmill in Austria, and the Pälkäne modular building production unit in Finland were closed during 2015. Our consolidated sustainability data covers our continuous operations as of the end of 2015, excluding these divested and closed units, with the exception of occupational health and safety (OHS) data, where these units are included in the consolidated performance figures for 2015.

## In accordance with GRI

This report corresponds to the 'Comprehensive' level in the GRI G4's reporting framework. This means that our reporting covers all the Standard Disclosures of the G4 framework and all the sustainability aspects we have identified as material in our operations. The index table on the following pages lists our Standard Disclosures with reference to G4 categories, aspects and indicators, and refers to the pages or locations where these issues are addressed in our annual reporting publications and/or other information channels.

## Aspect-specific data boundaries

Impacts that make sustainability topics relevant for us may occur outside of Stora Enso, or they may be material only for certain operations or locations. When

our reporting on a sustainability aspect or indicator only concerns specific units, geographical regions or other data collection boundaries, based on the identified materiality, this is specified in the comment field in the G4 index table, or in connection to the respective disclosure.

### Disclosure on management approach

Stora Enso's generic management approach to sustainability covers all of the aspects of the G4 framework identified as material. We also report on our management approach with regard to specific aspects in the relevant sections of this report, with respective page references included in the G4 index table.

### External assurance

This report has been assured by an independent third-party assurance provider in accordance with the voluntary external assurance practice followed in sustainability reporting. The assurance statement for this report appears on **page 82**.

Deloitte & Touche Oy has provided a limited level of assurance covering the contents in this report, as well as pages 4-11 and 60-63 in the group's **Progress Book**. For the first time a level of reasonable assurance has been provided for Stora Enso's reporting on direct and indirect fossil CO<sub>2</sub> emissions (scopes 1 and 2).

### The UN Global Compact

Stora Enso supports the ten principles of the UN Global Compact, a United Nations initiative set up to encourage businesses worldwide to embed responsibility into their operations. We respect and promote these principles throughout our operations, and report on our respective progress in this report.

Stora Enso is also a signatory of the UN Global Compact's CEO Water Mandate, a public-private initiative designed to assist companies in the development, implementation, and disclosure of water sustainability policies and practices. Our progress in addressing the six core elements of the CEO Water Mandate is also described in this report.



# Data by unit

This table presents unit-specific information on environmental performance, production, certificates, and numbers of employees. Joint ventures and units that were divested or closed during 2015 are excluded.

Unit	Number of employees <sup>a)</sup>	Production capacity <sup>b)</sup> 1 000 t	Products	Recovered fibre <sup>c)</sup>	Certificates							Fossil CO <sub>2</sub> emissions												
					ISO 9001	ISO 14001	ISO 22000	ISO 50001	OHSAS 18001	FDA	FSC® CoC	PEFC™ CoC	Waste to landfill	Hazardous waste <sup>d)</sup>	SO <sub>2</sub> <sup>e)</sup>	NO <sub>x</sub> as NO <sub>2</sub>	Direct CO <sub>2</sub> <sup>f)</sup>	Indirect CO <sub>2</sub> <sup>f)</sup>	CO <sub>2</sub> , on-site transport <sup>f)</sup>	Biogenic CO <sub>2</sub> , biomass fuels <sup>f)</sup>	COD	AOX	Phosphorous	Nitrogen
<b>Belgium</b>																								
Langerbrugge	354	155	①	x	x	x	x	x	x	x	7 755	79	11	247	98 903	51 718	1 475.1	557 127	919	1.2	4.9	25.1	6 472	
<b>Brazil</b>																								
Arapoti <sup>g)</sup>	321	185	①		x	x		x	x	x	128	112			14 930	47 059	572.4	84 538	380		0.7	3.0	2 215	
<b>China</b>																								
Dawang	217	170	①	x	x	x		x	x		0	1				116 847	271.5		48			1.9	957	
Dongguan	1 078	50*	④		x	x		x			2	0	0	130	6 711	31.8			28	0	0.1	0.3	0	
Jiashan	325	10*	④		x	x		x	x						2 028	7.7							0	
Qian'an	1 331	55*	④		x	x		x			345	6			10 233	57.1							1	
Suzhou	521	245	①		x	x		x	x	x	0	104	277	338	116 160	76 982	233.4		35		0.4	4.9	1 229	
<b>Estonia</b>																								
Tallinn	31	15*	④		x	x			x							721	277.5						1	
<b>Finland</b>																								
Anjala/Ingerois	326	435/280	① ②		x	x	x <sup>h)</sup>	x	x	x	74	8	237	138 047	189 009	1 505.4	124 023	1 862		4.0	99.7	9 368		
Enocell	165 <sup>j)</sup>	460	③		x	x	x	x	x	x	4 488	50	104	1 032	41 152	169.3	1 389 729	7 055	52.2	2.7	46.4	21 574		
Heinola Fluting	171	300	②		x	x	x	x	x	x	1 579	76	393	428	155 288	13 387	198.5	176 449	1 320		2.4	13.7	4 194	
Heinola	135 <sup>j)</sup>	100*	④	x	x	x	x	x	x		34				1 517	102.8							19	
Imatra	1 071 <sup>j)</sup>	1 110	② ③		x	x	x	x	x	x	2 042	408	185	2 093	142 278	104 274	1 622.8	2 108 747	18 737	90.0	15.0	233.0	63 737	
Kristiinankaupunki	42	20*	④		x	x	x	x	x		0				106	100	20.4						1	
Lahti	139	60*	④		x	x	x	x	x		105	47				2 530	73.4						11	
Oulu	614 <sup>j)</sup>	1 105	① ③		x	x	x	x	x	x	326	420	390	1 324	262 748	60 438	3 007.1	1 116 407	9 031	33.0	9.3	81.9	18 521	
Sunila	165	370	③		x	x	x	x	x	x	4 184	151	63	706	34 041	0	609.5	839 134	6 583	39.8	6.7	35.9	17 237	
Varkaus <sup>j)</sup>	173 <sup>j)</sup>	285	① ③		x	x		x	x	x	3 976	94	121	460	43 221	8 898	464.1	426 257	1 879	10.8	4.6	33.5	8 239	
Varkaus board <sup>j)</sup>	263 <sup>j)</sup>	390	② ③	x	x	x	x	x	x	x	233	44	143	196	23 507	8 423	117.0	136 707	786	0.3	1.5	19.6	2 839	
Veitsiluoto	524 <sup>j)</sup>	830	①		x	x	x	x	x	x	2 345	103	527	1 181	229 733	61 611	321.1	1 057 586	11 910	27.0	12.1	172.8	13 462	
<b>Germany</b>																								
Kabel	565	495	①		x	x	x	x	x		147		84	104 216	247 520	974.5	224	782	0.3	5.3	21.8	7 083		
Maxau	430	530	①	x	x	x	x	x	x		117	16	232	134 866	187 217	1 235.1	323 913	1 636	0.3	4.2	12.0	5 382		
Sachsen	261	320	①	x	x	x	x	x	x		126	4	155	159 994	2 198	808.8	47 442	676	0.6	0.6	3.7	3 367		
<b>Latvia</b>																								
Riga	142	100*	④		x	x			x					2.16	4 175	178.4							9	
<b>Lithuania</b>																								
Kaunas	47	20*	④		x	x			x		0					1 445	71.6						5	
<b>Poland</b>																								
Łódź	204	110*	④		x	x	x		x	x	1	0	3	3 267	6 375									11
Mosina	99	25*	④		x	x	x		x	x	44			360	1 795	38.6								
Ostrołęka <sup>k)</sup>	983	267	① ② ④	x <sup>l)</sup>	x	x	x <sup>m)</sup>		x	x	0	3	51	1	16 086	281 601	301.6	184 593	814		1.9	16.7	4 923	
Ostrołęka Narew	244	455	②		x	x	x		x	x	0	23	182	155	347 232	-79 466	1 031.2	103 560	276		1.3		1 986	
Tychy	136	90*	④	x	x	x		x	x	x	5				2 702	4 232							10	

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Unit	Number of employees <sup>a)</sup>	Production capacity <sup>b)</sup> 1 000 t	Products	Recovered fibre <sup>c)</sup>	Certificates								Fossil CO <sub>2</sub> emissions													
					ISO 9001	ISO 14001	ISO 22000	ISO 50001	OHSAS 18001	FDA	FSC® CoC	PEFC™ CoC	Waste to landfill	Hazardous waste <sup>d)</sup>	SO <sub>2</sub> <sup>e)</sup>	NO <sub>x</sub> as NO <sub>2</sub>	Direct CO <sub>2</sub> <sup>f)</sup>	Indirect CO <sub>2</sub> <sup>f)</sup>	CO <sub>2</sub> , on-site transport <sup>f)</sup>	Biogenic CO <sub>2</sub> , biomass fuels <sup>f)</sup>	COD	AOX	Phosphorous	Nitrogen	Process water discharges 1 000 m <sup>3</sup>	
<b>Russia</b>																										
Arzamas	173	100*	④		x	x																			25	
Balabanovo	328	165*	④		x	x																			29	
Lukhovitsy	131	80*	④		x	x																			13	
<b>Sweden</b>																										
Falu Rödfärg	<sup>n)</sup>		⑤		x	x							9 517	0		559	9									
Fors	562	445	②		x	x	x	x	x	x	x	0	98	7	99	3 318	2 413	644.4	218 798	1 624	0.3	1.4	22.1	4 675		
Hylte	369	480	①	x	12	x	x	x	x	x	x	39 809	100	0	114	7 672	3 922	912.7	224 202	908	0.1	2.0	21.8	5 103		
Jönköping	170	100*	④		x	x						2	22	1	356	405	52.4									
Kvarnsveden	552	720	①		x	x	x	x	x	x	x	149	20	116	27 826	37 484	10.5	210 815	2 150	1.0	1.5	38.8	9 484			
Nymölla	555	500	① ③		x	x	x	x	x	x	x	5	608	558	-7 982	15 799	1 804.6	620 888	13 030	0.3	10.1	88.2	26 134			
Skene	133	100*	④		x	x						27	0		41	55										
Skoghall	718	840	②		x	x	x	x	x	x	x	3 232	491	118	431	55 349	17 958	2 046.9	890 633	8 231	15.8	7.6	74.7	23 622		
Skoghall (Forshaga)	101	110	②		x	x	x	x	x	x	x	7			1 233	97	209.8									
Skutskär	361	540	③		x	x	x	x	x	x	x	0	12	485	814	8 028	7 642	1 428.1	1 805 196	6 301	43.4	29.6	86.8	19 821		
Vikingsstad	55	75*	④		x	x						4		2	1 017	194	0.5									
<b>Total pulp, paper, board, converted products</b>		12 022 <sup>o)</sup>										70 766	12 672	3 718	11 011	2 176 026	1 552 669	23 351	12 646 968	97 001	316	130	1 158	281 759		
<b>Total, wood products</b>																										
Sawmills <sup>p)</sup>					<sup>q)</sup>	<sup>q)</sup>	<sup>q)</sup>	<sup>q)</sup>	<sup>q)</sup>	<sup>q)</sup>	<sup>q)</sup>	6 945	370	25	390	3 158	170 257	19 936	394 977	524		5			185	
<b>Grand total</b>																										
All units												<b>77 711</b>	<b>13 042</b>	<b>3 743</b>	<b>11 401</b>	<b>2 179 184</b>	<b>1 722 926</b>	<b>43 286</b>	<b>13 041 945</b>	<b>97 525</b>	<b>316</b>	<b>135</b>	<b>1 158</b>	<b>281 944</b>		

<sup>a)</sup> Yearly average.

<sup>b)</sup> Production capacities of integrated pulp, paper, and board mills include paper and board production capacities.

<sup>c)</sup> Mills using recovered fibre as raw material (fully or partly).

<sup>d)</sup> Reported on the basis of country-specific definitions applied in national regulations.

<sup>e)</sup> Total sulphur is reported as sulphur dioxide (SO<sub>2</sub>) equivalent, but includes all sulphurous compounds.

<sup>f)</sup> All CO<sub>2</sub> figures are calculated using the WRI/WBCSD Greenhouse Gas Protocol.

<sup>g)</sup> Stora Enso announced its plans to divest Arapoti Mill in December 2015.

<sup>h)</sup> Covers only board production at Ingerois Mill.

<sup>i)</sup> This figure does not include service company personnel.

<sup>j)</sup> Mill production shifted from fine paper to board and packaging paper in September 2015. Due to the short operation time, the number of employees is reported for the year end, and not as a yearly average.

<sup>k)</sup> Ostrolęka Mill includes two units. One produces corrugated board (capacity converted into metric tonnes), the other produces kraft paper and recycled paper.

<sup>l)</sup> Kraft paper unit uses recycled fibre.

<sup>m)</sup> Only covers corrugated board unit.

<sup>n)</sup> Does not have its own personnel but hires personnel from Stora Enso AB.

<sup>o)</sup> Excluding total corrugated board capacity 1 275 million m<sup>2</sup>.

<sup>p)</sup> Production capacities (excluding Hartola) for sawn timber 5 550 000 m<sup>3</sup> and for wood pellets 320 000 t.

<sup>q)</sup> See separate table for Wood Products units.

The figure 0 (zero) in the table signifies that such discharges, emissions, or wastes do not occur or only occur below detection limits. Where cells are left blank, this signifies that the parameter is considered as not relevant for that unit.

\* million m<sup>2</sup>

Products: ① paper ② board and packaging paper ③ market pulp ④ converted products (e.g. cores, corrugated board) ⑤ red paint pigment

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Unit	Capacities				Certificates							Fossil CO <sub>2</sub> emissions							
	Number of employees <sup>a)</sup>	Sawn timber 1 000 m <sup>3</sup>	Further processed 1 000 m <sup>3</sup>	CLT 1 000 m <sup>2</sup>	Wood pellets 1 000 t	ISO 9001	ISO 14001	OHSAS 18001	ISO 50001	PEFC® CoC	FSC® CoC	Waste to landfill t	Hazardous waste <sup>b)</sup> t	SO <sub>2</sub> t	NO <sub>x</sub> as NO <sub>2</sub> t	Direct CO <sub>2</sub> <sup>c)</sup> t	Indirect CO <sub>2</sub> <sup>c)</sup> t	CO <sub>2</sub> on-site transportation <sup>d)</sup> t	Biogenic CO <sub>2</sub> , biomass fuels <sup>e)</sup> t
<b>Non-integrated sawmills</b>																			
<b>Austria</b>																			
Bad St. Leonhard	224	390	290	65		x	x	x	x	x	x		60		4		10 812	1 299.5	
Brand	205	470	290							x			25				1 784	1 869.7	
Ybbs	321	590	420	75						x	x		48				3 075	2 452.2	
<b>Czech Republic</b>																			
Planá	218	340	270							x		412	52	1	34		8 245	1 843.4	38 729
Ždírec	260	550	290		30	x	x	x	x	x		2 903	16	1	120		0	2 222.8	89 087
<b>Estonia</b>																			
Imavere	312	350	190		100	x	x	x			x	2 112	52				48 734	1 768.9	49 043
Näpi	93	75	130		15	x	x	x			x	0	11	0	5	19	8 258	358.2	4 733
<b>Finland</b>																			
Honkalahti	114	310	90			x	x	x	x	x	x		3		33	436	5 648	736.4	47 375
Kitee	76	260	120		25	x	x	x	x	x	x	12	8		23		3 853	432.5	30 169
Uimaharju	55	260	20			x	x	x	x	x	x		21		1	1 130	2 159	866.0	967
<b>Germany</b>																			
Pfarrkirchen	93		140			x	x	x	x	x	x	20	2	2	17		2 840	272.7	8 210
<b>Latvia</b>																			
Launkalne	122	215	10			x	x	x		x	x	338	4		31	226	2 910	1 051.6	21 044
<b>Lithuania</b>																			
Alytus	171	200	105			x	x	x	x		x		19		12		12 606	1 156.8	18 875
<b>The Netherlands</b>																			
Amsterdam Planing	40		110			x	x	x		x	x					21	716	6.9	
<b>Poland</b>																			
Murow	157	150	20							x	x	4	1	0	2		1 679	473.8	978
<b>Russia</b>																			
Impilahti	111	130	20		15	x	x	x			x	229	0	0	4		16 394	33.8	10 025
Nebolchi	178	220	30		35			x			x	910	0	0	44	133	30 663		28 697
<b>Sweden</b>																			
Ala	140	380	45							x	x		34		25		195	1 814.1	47 045
Gruvön	82	400	150		100					x	x		11	0		1 193	5 120	1 276.4	
<b>Non-integrated sawmills total</b>		<b>5 290</b>	<b>2 740</b>	<b>140</b>	<b>320</b>							<b>6 940</b>	<b>367</b>	<b>4</b>	<b>355</b>	<b>3 158</b>	<b>165 691</b>	<b>19 935.7</b>	<b>394 977</b>
<b>Sawmills</b>																			
Veitsiluoto <sup>d)</sup>	50					x	x	x	x	x	x			17	23		2 727		
Varkaus	54	260				x	x	x	x	x	x	5	3	4	12		1 839		
Hartola <sup>e)</sup>	34																		

- a) Yearly average.
- b) Reporting is based on country-specific definitions applied in national regulations.
- c) All CO<sub>2</sub> figures are calculated using the WRI/WBCSD Greenhouse Gas Protocol.
- d) Veitsiluoto Sawmill in Finland with its sawing capacity of 200 000 m<sup>3</sup> is reported with the Paper division.
- e) Module construction capacity at Hartola house factory is 1 000 modules.



# GRI Content Index (G4)

- SR - Stora Enso Sustainability Report 2015
  - FR - Stora Enso Financial Report 2015
  - PB - Stora Enso Progress Book 2015
- Fully reported
  - ◉ Partially reported

		Location and comments	Level
<b>GENERAL STANDARD DISCLOSURES</b>			
<b>STRATEGY AND ANALYSIS</b>			
G4-1	Statement from the most senior maker of the organisation	<b>PB 8-13, FR Report of the Board of Directors, SR 2 and 8</b>	●
G4-2	Description of key impacts, risks, and opportunities	SR 6-8, <b>PB 6-7 and 64-67</b>	●
<b>ORGANISATIONAL PROFILE</b>			
G4-3	Name of the organisation	<b>PB 2</b>	●
G4-4	Primary brands, products, and services	<b>PB 3</b>	●
G4-5	Location of headquarters	<b>PB back cover</b>	●
G4-6	Countries in which operations are located	<b>PB 4, SR 33 and 71-73</b>	●
G4-7	Nature of ownership and legal form	<b>PB 2</b>	●
G4-8	Markets served	<b>PB 4-5</b>	●
G4-9	Scale of the reporting organisation	<b>FR Report of the Board of Directors, FR Note 30, SR 71-73</b>	●
G4-10	Breakdown of workforce	SR 33-34, <b>FR Note 3</b> . 62% of the Group's employees are production workers (67% in 2014). 5% of the group's employees have temporary contracts (4%). The share of women among the employees with temporary contracts is in line with the share of women among all the group's employees. Based on our employee survey approximately 17% of our production workers are female.	●
G4-11	Coverage of collective bargaining agreements	At the end of 2015 approximately 83% of our employees were covered by collective bargaining agreements (79% in 2014). This figure is approximate due to differences in national legislations.	●
G4-12	Description of supply chain	SR 38, 58 and 61	●
G4-13	Significant changes during the reporting period	SR 69, <b>FR Note 4</b>	●
G4-14	Addressing the precautionary approach or principle	SR 6-10, 15 and 21-22, <b>FR Report of the Board of Directors, PB 64-67</b>	●
G4-15	External charters, principles, or initiatives endorsed	SR 9-10 and 68	●
G4-16	Memberships in associations	SR 10	●
<b>IDENTIFIED MATERIALS ASPECTS AND BOUNDARIES</b>			
G4-17	Report coverage of the entities in the consolidated financial statements.	<b>FR Notes 30 and 31</b> . SR 69. All entities in our Financial Report also are covered by our Sustainability Report. Joint operations or equity-accounted investments are not consolidated in most of the group's sustainability indicators. When they are consolidated in the group's sustainability indicator this is specified with a footnote in connection to the respective disclosure. The sustainability performance of joint operations and equity-accounted investments is addressed where material in this report.	●
G4-18	Process for defining the report content and the aspect boundaries	SR 69-70	●
G4-19	Material aspects identified	We have identified all the aspects in the G4 framework except Marketing Communications as material for the Stora Enso group Sustainability Report 2015.	●
G4-20	Aspect boundary within the organisation	SR 69-70	●
G4-21	Aspect boundary outside the organisation	SR 69-70	●
G4-22	The effect of restatements of information provided in previous reports	No major restatements	●
G4-23	Significant changes in the scope and aspect boundaries from previous report	<b>FR Note 4</b> , SR 69	●

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		Location and comments	Level
<b>STAKEHOLDER ENGAGEMENT</b>			
G4-24	List of stakeholder groups engaged	SR 10	●
G4-25	Identification and selection of stakeholders	SR 9–10 and 14–29	●
G4-26	Approaches to stakeholder engagement	SR 9–10 and 14–29	●
G4-27	Response to key topics and concerns raised through stakeholder engagement	SR 9–10 and 14–29	●
<b>REPORT PROFILE</b>			
G4-28	Reporting period	1 January 2015 – 31 December 2015	●
G4-29	Date of most recent previous report	17 February 2015	●
G4-30	Reporting cycle	Annual. Stora Enso additionally provides quarterly updates on material sustainability topics in the Sustainability sections of the group's Interim Reviews, available on the group's website.	●
G4-31	Contact point for questions	<b>PB back cover</b>	●
G4-32	'In accordance' option, the GRI content index and external assurance	SR content index for 'In accordance' – Comprehensive. SR 74-83	●
G4-33	Policy and current practice regarding external assurance	SR 70. Since the reporting period of 2014 the group principal auditor (statutory Financial Auditor) Deloitte has also provided limited external assurance for the group's sustainability information. In 2015 the external assurance engagement included reasonable assurance level on direct and indirect fossil CO <sub>2</sub> emission reporting. For the assurance statement, see SR pages 82-83. Stora Enso's Internal Audit and Board of Director's Financial and Audit Committee were involved in the review of the external assurance fee on sustainability reporting. The Board of Director's Sustainability and Ethics Committee is involved in reviewing the observations and recommendations related to the external assurance on sustainability reporting.	●
<b>GOVERNANCE</b>			
G4-34	Governance structure	SR 6–7, <b>PB 68–77</b>	●
G4-35	The process for delegating authority for sustainability topics	SR 6–7, <b>PB 68–77</b>	●
G4-36	Executive-level positions with responsibility for sustainability topics	SR 6, <b>PB 76–77</b>	●
G4-37	Processes for consultation between stakeholders and the highest governance body	SR 6–7 and 37, <b>PB 83</b> . All shareholders have the right to make proposals to the shareholder meeting agenda regarding matters that are within the authority of the Annual General Meeting (AGM). All shareholders also have the right to present questions to the Board of Directors (BOD) and executive management at the AGM. The employee representatives meet the chairman and the vice chairman of the BOD and the CEO in connection with board meetings on a regular basis.	●
G4-38	Composition of the highest governance body and its committees	SR 6 and 34, <b>PB 68–75</b>	●
G4-39	Position of the chair of the board of directors	The chair of the Board of Directors is independent from the company's executive management.	●
G4-40	Nomination and selection processes for the highest governance body and its committees	<b>PB 68–73</b> . The company has a nomination board assigned by the AGM to propose new board members. When preparing proposals the nomination board evaluates the specific needs of the Board of Directors, including also possible needs for sustainability related competencies, and takes those specific qualifications into account in its proposals.	●
G4-41	Avoiding conflicts of interest	<b>PB 68–77</b>	●
G4-42	The role of the highest governance body and senior executives in setting purpose, values, and strategy	SR 6, <b>PB 68–77</b>	●
G4-43	Measures taken to enhance the Board of Directors' collective knowledge of sustainability topics	SR 6 and 37, <b>PB 68–77</b>	●
G4-44	Evaluating board performance with respect to sustainability topics	SR 6, <b>PB 68–77</b> . The evaluation of the board's performance is generic in its nature and focuses mostly on working methods and not on any specific area in particular. However, if concerns relating to sustainability issues arise, the Sustainability and Ethics Committee's role is to identify those issues and bring them to the agenda of the Board of Directors. The Sustainability and Ethics Committee further evaluates its performance annually in connection, particularly focusing on the tasks within its responsibility.	●
G4-45	The role of Board of Directors in the identification and management of economic, environmental, and social impacts, risks, and opportunities	SR 6, <b>FR Report of the Board of Directors</b>	●
G4-46	The role of Board of Directors in reviewing the risk management processes for economic, environmental, and social topics	SR 6, <b>FR Report of the Board of Directors</b>	●
G4-47	The frequency of the Board of Directors' review of sustainability impacts, risks, and opportunities	SR 6 and 37, <b>PB 68–77</b>	●

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		Location and comments	Level
G4-48	The highest committee or position to formally approve this report and its materiality review	SR 6	●
G4-49	Process for communicating critical concerns to the highest governance body	SR 6 and 37, <b>PB 83-84</b> . All shareholders have the right to make proposals to the shareholder meeting agenda regarding matters that are within the authority of the Annual General Meeting (AGM). All shareholders also have the right to present questions to the Board of Directors (BOD) and executive management at the AGM. The employee representatives meet the chairman and the vice chairman of the BOD and the CEO in connection with board meetings on a regular basis.	●
G4-50	Nature and number of critical concerns communicated to the highest governance body	SR 6, 10 and 37	●
G4-51	Remuneration policies for the Board of Directors and senior executives	<b>FR Note 7, PB 68-77</b>	●
G4-52	Process for determining remuneration	<b>FR Note 7, PB 68-77</b>	●
G4-53	Inclusiveness of stakeholders' views regarding remuneration	<b>FR Note 7, PB 68-77</b>	●
G4-54	Ratio of the annual total compensation for the organisation's highest-paid individual to the median annual total compensation	SR 34	●
G4-55	Ratio of percentage increase with regards to G4-54	SR 34. The decrease of the ratio for Finland and increase for Sweden compared to 2014 are mainly due to organisational changes in the Group Leadership Team.	●
<b>ETHICS AND INTEGRITY</b>			
G4-56	Values, principles, standards, code of conduct, and code of ethics	SR 6 and 35-37. Our Code of Conduct is currently available in 16 languages.	●
G4-57	Mechanisms for finding advice on ethical and lawful behaviour, and matters related to organisational integrity	SR 37	●
G4-58	Mechanisms for reporting concerns about unethical or unlawful behaviour, and matters related to organisational integrity	SR 37	●
<b>SPECIFIC STANDARD DISCLOSURES: MANAGEMENT APPROACH AND PERFORMANCE INDICATORS</b>			
<b>GENERIC DISCLOSURES ON MANAGEMENT APPROACH</b>			
<b>ECONOMIC</b>			
<b>Economic performance</b>			
G4-EC1	Direct economic value generated and distributed	<b>PB 7</b>	●
G4-EC2	Risks and opportunities due to climate change	SR 54-55, <b>PB 64-67</b>	●
G4-EC3	Coverage of defined benefit plan obligations	<b>FR Note 20</b>	●
G4-EC4	Financial assistance from government	<b>FR Stora Enso in Capital Markets, FR Note 5, FR Note 9, PB 60-63</b>	●
<b>Market Presence</b>			
G4-EC5	Entry level wage by gender compared to minimum wage	SR 33. Gender-specific data not considered as material.	●
G4-EC6	Proportion of senior management hired locally	SR 31	●
<b>Indirect Economic Impacts</b>			
G4-EC7	Development and impact of infrastructure investments and services supported	SR 23-29, <b>PB 7</b>	●
G4-EC8	Significant indirect economic impacts	SR 23-29, <b>PB 7</b> and <b>60-63</b>	●
<b>Procurement Practices</b>			
<b>Specific information on management approach to procurement practices</b>			
G4-EC9	Spending on local suppliers	SR 14 and 38-49 SR 23, 24, 27, 41, 44 and 60. Wood and paper for recycling (Pfr) deliveries to our mills are largely based on local supply.	●



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	Location and comments	Level
<b>ENVIRONMENT</b>		
<b>Specific information on management approach to environment</b>		
	SR 51–64	
<b>Materials</b>		
G4-EN1	Materials used by weight or volume	●
G4-EN2	Recycled materials used	●
<b>Energy</b>		
<b>Specific information on management approach to energy</b>		
	SR 51–53	
G4-EN3	Energy consumption within the organisation	●
G4-EN4	Energy consumption outside of the organisation	○
G4-EN5	Energy intensity	●
G4-EN6	Reduction of energy consumption	●
G4-EN7	Reductions in energy requirements of products and services	○
<b>Water</b>		
G4-EN8	Total water withdrawal	●
G4-EN9	Water sources significantly affected by withdrawal of water	●
	Lake Ivö in Sweden and the River Mulde in Germany. Lake Ivö is a water source for our Nymölla Mill, whose average annual withdrawals amount to more than 5% of the lake's annual average volume of 200 340 thousand cubic meters. The lake is a Natura 2000 site due to rare fish species. The mill regulates water levels in the lake in accordance with legal obligations. No other measures are required by the authorities. The River Mulde in Germany is a water source for our Sachsen Mill. The river is a Natura 2000 site with alluvial landscapes which provide habitat for many bird species. The initial level of water pollution upstream from the mill is relatively high.	
G4-EN10	Total recycling and reuse of water	○
	SR 64. Around 96% of our total water withdrawal is recycled back to the environment. This water is typically reused in our processes before recycling, but figures on the volumes reused are not available.	
<b>Biodiversity</b>		
<b>Specific information on management approach to biodiversity</b>		
	SR 43–49	
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	●
G4-EN12	Significant impacts on biodiversity	●
G4-EN13	Habitats protected or restored	●
G4-EN14	Number of vulnerable species affected by operations	○
	SR 43–49. Number of species not reported, but biodiversity conservation efforts described.	
<b>Emissions</b>		
G4-EN15	Direct greenhouse gas (ghg) emissions (scope 1)	●
G4-EN16	Energy indirect greenhouse gas (ghg) emissions (scope 2)	●
G4-EN17	Other indirect greenhouse gas (ghg) emissions (scope 3)	●
G4-EN18	Greenhouse gas (ghg) emissions intensity	●
G4-EN19	Reduction of greenhouse gas (ghg) emissions	●
G4-EN20	Emissions of ozone-depleting substances (ods)	●
	No ozone-depleting substances are used in Stora Enso's manufacturing processes.	
G4-EN21	NOx, SOx, and other significant air emissions	●
	SR 53	
<b>Effluents and Waste</b>		
G4-EN22	Total water discharge	●
	SR 65 and 71-73	
G4-EN23	Total weight of waste by type and disposal method	●
	SR 62	
G4-EN24	Significant spills	●
	SR 66	
G4-EN25	Hazardous waste transported, imported, exported, or treated	○
	SR 60. Data not available on hazardous waste internationally exported or imported by our authorised service providers.	
G4-EN26	Water bodies and related habitats significantly affected by water discharges and runoff	●
	See EN9 above	

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		Location and comments	Level
<b>Products and Services</b>			
<b>Specific information on management approach to products and services</b>		SR 11–12, <b>PB 14–25</b>	
G4-EN27	Mitigation of environmental impacts of products and services	SR 11–12	●
G4-EN28	Percentage of products sold and their packaging materials that are reclaimed by category	SR 59–61. The packaging materials we produce and use to protect our pulp, paper, and paper board deliveries during their transportation are mainly made of our own fibre-based products, and they are fully recyclable according to European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, and its amendments.	●
<b>Compliance</b>			
G4-EN29	Fines and sanctions for non-compliance with environmental regulations	SR 66. No fines reported during 2015.	●
<b>Transport</b>			
<b>Specific information on management approach to transportation</b>		SR 56	
G4-EN30	Significant environmental impacts of transportation	SR 56	●
<b>Overall</b>			
G4-EN31	Environmental expenditures and investments	<b>FR Report of the Board of Directors</b> (Environmental opportunities and challenges)	○
<b>Supplier Environmental Assessment</b>			
<b>Specific information on management approach to supplier assessment</b>		SR 38–47	
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	SR 40. Our key performance indicator on responsible sourcing is based on the coverage of our Supplier Code of Conduct in supplier spending.	●
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain	SR 38–47 and 57–58	●
<b>Environmental Grievance Mechanisms</b>			
G4-EN34	Grievances about environmental impacts through formal grievance mechanisms	SR 37. All our production units register and monitor complaints received from stakeholders in relation to the units' environmental performance as an integral part of their respective environmental management systems. In 2015 units' environmental management systems across the Group recorded a total of 136 stakeholder complaints (149 in 2014).	○
<b>LABOUR PRACTICES AND DECENT WORK</b>			
<b>Specific information on management approach to Labour Practices and Decent Work</b>		SR 14–20 and 30–33, and <b>PB 56–59</b>	
<b>Employment</b>			
G4-LA1	New employee hires and employee turnover	SR 34	○
G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	5% of the Group's employees have temporary contracts. The benefits provided for employees vary from country to country, depending on national legislation. In the European countries where we have many employees we typically do not provide differentiated benefits to employees on the basis of their contract type (permanent or temporary), though certain differences in benefits may exist in relation to the length of employment. Long-term employees in China typically receive differentiated benefits such as leave-of-absence rights and additional insurance benefits.	●
G4-LA3	Return to work and retention rates after parental leave	In 2015 return to work after parental leave as % of employees: 95% in Finland, 95% in Sweden, 75% in Germany, 73% in China, and not applicable in Poland. Retention rates one year after returning to work from parental leave: 85% in Finland, 88% in Sweden, 81% in China, and not applicable in Germany and Poland.	○
<b>Labour/Management Relations</b>			
G4-LA4	Minimum notice periods regarding operational changes	Our aim is to be proactive and involve key stakeholders as early as possible whenever there is a need for major organisational changes that will affect our staff. Depending on the type of change, the national legislation, and local union agreements, we normally inform employees and/or union representatives between 2 weeks and 2 months prior to planned changes.	●

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		Location and comments	Level
<b>Occupational Health and Safety (OHS)</b>			
<b>Specific information on management approach to OHS</b>		SR 30–31	
G4-LA5	Percentage of workforce represented in formal joint management–worker health and safety committees	SR 32	●
G4-LA6	Injuries, lost days, absenteeism, and fatalities	SR 32. We consider consolidated reporting of gender-specific data on safety incidents as not material from a safety management point of view in our operations, so such figures are not centrally compiled or reported in our group figures.	●
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	SR 32–33	⊙
G4-LA8	Health and safety topics covered in formal agreements with trade unions	See G4–11. Health and safety issues are additionally covered in our collective bargaining agreements as a separate topic at the local level.	●
<b>Training and education</b>			
G4-LA9	Average hours of training per year per employee by gender, and by employee category	The average number of training hours per employee across all of our units in 2015 was 31 (27 in 2014). When broken down by gender and employee category, the average training hours were 26 hours for female employees (25), 33 hours for male employees (28), and 37 hours for production workers (27).	●
G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	SR 29 and 30. Where redundancies are unavoidable, our key principle is to work together with the employees affected to help them find other employment wherever possible. Employee organisations and other stakeholders are fully involved in such processes, in line with all applicable regulations.	●
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	SR 33	●
<b>Diversity and Equal Opportunity</b>			
G4-LA12	Composition of governance bodies and employee breakdown	SR 34	●
<b>Equal Remuneration for Women and Men</b>			
G4-LA13	Ratio of basic salary and remuneration of women to men	SR 34	●
<b>Supplier Assessment for Labour Practices</b>			
<b>Specific information on management approach to supplier assessment</b>		SR 14–20 and 38–41	
G4-LA14	Percentage of new suppliers that were screened using labour practices criteria	SR 18 and 40. Our key performance indicator on responsible sourcing is based on the coverage of our Supplier Code of Conduct in supplier spending.	●
G4-LA15	Significant actual and potential negative impacts for labour practices in the supply chain and actions taken	SR 14–20 and 38–41	●
<b>Labour Practices Grievance Mechanisms</b>			
G4-LA16	Grievances about labour practices through formal grievance mechanisms	SR 37	●



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	Location and comments	Level
<b>HUMAN RIGHTS</b>		
<b>Specific information on management approach to human rights</b>		
SR 14–20		
<b>Investment</b>		
G4-HR1	Human rights screening or clauses included in significant investment agreements	SR 15 ●
G4-HR2	Employee training on human rights	SR 9, 15 and 37 ●
<b>Non-discrimination</b>		
G4-HR3	Actions taken in incidents of discrimination	SR 37 ●
<b>Freedom of Association and Collective Bargaining</b>		
G4-HR4	Supporting right to freedom of association and collective bargaining in risk areas	SR 14–20 and 35–41. Approximately 83% of our employees are covered by collective bargaining agreements (79% in 2014). This figure is only approximate due to differences in national legislations. In China the right to freedom of association and collective bargaining is expressly stipulated by law. Most of our Chinese operations have established unions that form part of the state-authorised China Labour Union. We have also formed worker councils at most of our units in China to serve as channels for direct feedback and dialogues between employees and management. A similar system is in place in our operations in Laos, where we have a worker’s representative group elected by employees. ●
<b>Child Labor</b>		
G4-HR5	Measures taken to eliminate child labour in risk areas	SR 14–20 and 39 ●
<b>Forced or Compulsory Labour</b>		
G4-HR6	Measures taken to eliminate forced or compulsory labour in risk areas	SR 14–20 and 39 ●
<b>Security Practices</b>		
G4-HR7	Percentage of security personnel trained in human rights policies or procedures	SR 15–20. Data not available on third parties’ security personnel training. ○
<b>Indigenous Rights</b>		
G4-HR8	Violations of indigenous peoples’ rights and actions taken	SR 20 ●
<b>Assessment</b>		
G4-HR9	Operations subject to human rights reviews or impact assessments	SR 15 ●
<b>Supplier Human Rights Assessment</b>		
<b>Specific information on management approach to supplier assessment</b>		
SR 14–20 and 38–41		
G4-HR10	Percentage of new suppliers that were screened using human rights criteria	SR 18 and 40. Our key performance indicator on responsible sourcing is based on the coverage of our Supplier Code of Conduct in supplier spending. ●
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain	SR 14–20 and 38–41. ●
<b>Human Rights Grievance Mechanisms</b>		
G4-HR12	Grievances about human rights through formal grievance mechanisms	SR 37 ●

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	Location and comments	Level
<b>SOCIETY</b>		
<b>Specific information on management approach to society</b>	SR 14–29 and 35–37	
<b>Local Communities</b>		
<b>Specific information on management approach to local communities</b>	SR 21–29	
G4-SO1 Local community engagement, impact assessments, and development programs	SR 21–29	●
G4-SO2 Operations with significant negative impacts on local communities	SR 21–29	●
<b>Anti-corruption</b>		
G4-SO3 Operations assessed for risks related to corruption	SR 36–37	●
G4-SO4 Anti-corruption training	SR 37	●
G4-SO5 Actions taken in response to corruption incidents	SR 37	●
<b>Public Policy</b>		
G4-SO6 Political contributions	As a general rule, Stora Enso does not make political contributions. Guidance and rules for political contributions are defined in our Business Practice Policy, available at <a href="http://www.storaenso.com/sustainabilitypolicies">www.storaenso.com/sustainabilitypolicies</a> .	●
<b>Anti-competitive Behaviour</b>		
G4-SO7 Anti-trust and monopoly court cases	<b>FR Note 29</b>	●
<b>Compliance</b>		
G4-SO8 Fines and sanctions for non-compliance	Stora Enso has not been subject to any significant fines or significant monetary sanctions due to non-compliance with laws and regulation during 2015.	●
<b>Supplier Assessment for Impacts on society</b>		
<b>Specific information on management approach to supplier assessment</b>	SR 14–20 and 38–41	
G4-SO9 Percentage of new suppliers that were screened using criteria for impacts on society	SR 18 and 40. Our key performance indicator on responsible sourcing is based on the coverage of our Supplier Code of Conduct in supplier spending.	●
G4-SO10 Significant actual and potential negative impacts on society in the supply chain	SR 14–20 and 38–41	●
<b>Grievance Mechanisms for Impacts on society</b>		
G4-SO11 Grievances about impacts on society through formal grievance mechanisms	SR 37	●
<b>PRODUCT RESPONSIBILITY</b>		
<b>Specific information on management approach to product responsibility</b>	SR 11–12	
<b>Customer Health and Safety</b>		
G4-PR1 Assessment of health and safety impacts of products	SR 11	●
G4-PR2 Compliance with regulations and voluntary codes concerning the health and safety impacts of products	No significant non-compliance incidents occurred during 2015.	●
<b>Product and Service Labeling</b>		
G4-PR3 Product information required by procedures	SR 12	●
G4-PR4 Compliance with regulations and voluntary codes concerning product information	No significant non-compliance incidents occurred during 2015.	●
G4-PR5 Results of surveys measuring customer satisfaction	SR 9, <b>PB 15</b>	○
<b>Customer Privacy</b>		
G4-PR8 Complaints regarding breaches of customer privacy and data	SR 35. No substantial complaints were received during 2015.	●
<b>Compliance</b>		
G4-PR9 Compliance with regulations concerning the provision and use of products and services	No significant non-compliance incidents occurred during 2015.	●

# Independent assurance statement



## To the Management of Stora Enso Oyj

We have been engaged by Stora Enso Oyj (hereafter Stora Enso) to provide a limited assurance on Stora Enso's Sustainability Information and a reasonable assurance on Stora Enso's direct and indirect (scope 1+2) fossil CO<sub>2</sub> emissions as a whole within the Sustainability Information for the reporting period of January 1, 2015 to December 31, 2015. The information subject to the assurance engagement is the Sustainability Report 2015 and pages 4–11 and 60–63 of the Progress Book 2015 (hereafter: Sustainability Information).

## Management's responsibility

Management is responsible for the preparation of the Sustainability Information in accordance with the Reporting criteria as set out in Stora Enso's reporting principles on pages 69-70 and 55 of the Sustainability Report and in the Sustainability Reporting Guidelines (G4 Comprehensive) of the Global Reporting Initiative. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the Sustainability Information that are free from material misstatement, whether due to fraud or error, selecting and applying appropriate criteria and making estimates that are reasonable in the circumstances.

## Auditor's responsibility

Our responsibility is to express an assurance conclusion on the Sustainability Information based on our engagement. We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised) to provide limited assurance on performance data and statements within

the Sustainability Information and to provide reasonable assurance on direct and indirect (scope 1+2) fossil CO<sub>2</sub> emissions as a whole.

This requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance whether any matters come to our attention that cause us to believe that the Sustainability Information has not been prepared, in all material respects, in accordance with the Reporting criteria or that the Sustainability Information is not reliable, in all material respects, based on the Reporting criteria.

In addition, we have responsibility to form an independent conclusion, based on our reasonable assurance procedures, on whether the fossil indirect and direct CO<sub>2</sub> emissions as a whole are reported, in all material respects, in accordance with the Reporting criteria and that it is reliable, in all material respects, based on the Reporting criteria.

We did not perform any assurance procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the Sustainability Information. Consequently, we draw no conclusion on the prospective information. This assurance statement has been prepared in accordance with the terms of our engagement. We do not assume responsibility to anyone else, except to Stora Enso for our work, for this statement, or for the conclusions we have reached.

A limited assurance engagement with respect to sustainability related data involves performing procedures to obtain evidence about the Sustainability Information. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is less than, a reasonable assurance

engagement. It does not include detailed testing of source data or the operating effectiveness of processes and internal controls and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a reasonable assurance engagement.

Our procedures on limited assurance has included:

- Conducting interviews with senior management responsible for sustainability at Stora Enso to gain an understanding of Stora Enso's targets for sustainability as part of the business strategy and operations;
- Reviewing internal and external documentation and verifying to what extent these documents and data support the information included in the Sustainability Information and evaluating whether the information presented in the Sustainability Information is in line with our overall knowledge of sustainability at Stora Enso;
- Conducting interviews with employees responsible for the collection and reporting of the information included in the Sustainability Information and reviewing of the processes and systems for data gathering, including the aggregation of the data for the Sustainability Information;
- Performing analytical review procedures and testing data on a sample basis to assess the reasonability of the presented information;
- Performing site visits to selected sites in Suzhou and Dawang in China to review compliance to reporting policies, to assess the reliability of the sustainability data reporting process as well as to test the data collected for the Sustainability Reporting purposes on a sample basis; and



- Assessing that the Sustainability Reporting has been prepared in accordance with the Sustainability Reporting Guidelines (G4 Comprehensive) of the Global Reporting Initiative.

Our reasonable assurance engagement involves performing procedures to obtain evidence about the indirect and direct fossil CO<sub>2</sub> emissions. In addition to the limited assurance engagement, our key assurance procedures have included an evaluation of the operating effectiveness of internal control and the systems and processes for collecting and processing the indirect and direct fossil CO<sub>2</sub> emissions data. Furthermore, we have performed testing, on a sample basis, at selected sites, chosen based on an evaluation of significance, as well as general and specific risks, to evaluate whether indirect and direct fossil CO<sub>2</sub> emissions as a whole presented in the Sustainability Information are reported according to the Reporting criteria. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

#### Our independence and competences in providing assurance to Stora Enso

We complied with Deloitte's independence policies which address and, in certain cases, exceed the requirements of the International Federation of Accountants Code of Ethics for Professional Accountants in their role as independent auditors and in particular preclude us from taking financial, commercial,

governance and ownership positions which might affect, or be perceived to affect, our independence and impartiality and from any involvement in the preparation of the Sustainability Information. We have maintained our independence and objectivity throughout the year and there were no events or prohibited services provided which could impair our independence and objectivity. This engagement was conducted by a multidisciplinary team including assurance and sustainability expertise with professional qualifications. Our team is experienced in providing sustainability reporting assurance.

#### Limited assurance conclusion

On the basis of the procedures we have performed, nothing has come to our attention that causes us to believe that the information subject to the limited assurance engagement is not prepared, in all material respects, in accordance with the Sustainability Reporting Guidelines (G4 Comprehensive) of the Global Reporting Initiative or that the Sustainability Information is not reliable, in all material respects, with regard to the Reporting criteria.

#### Reasonable assurance conclusion

On the basis of the procedures we have performed, in our opinion, Stora Enso's reporting on direct and indirect (scope 1+2) fossil CO<sub>2</sub> emissions as a whole is prepared in accordance with the Reporting criteria and is reliable, in all material respects, with regard to the Reporting criteria.

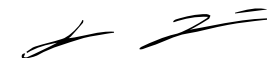
Our assurance statement should be read in conjunction with the inherent limitations of accuracy and completeness for sustainability information. This independent assurance statement should not be used on its own as a basis for interpreting Stora Enso's performance in relation to its policies of sustainability.

Helsinki 16 February 2016

Deloitte & Touche Oy



Jukka Vattulainen  
Authorized Public Accountant



Lasse Ingström  
Authorized Public Accountant