

# Criteria for Mitigation of Climate Impact from Food Production and Distribution

Version 2010:3, accepted by the project steering group on October 5<sup>th</sup>, 2010

## Aims and scope

Today there are two important global environmental aspects that are partly linked: global warming and society's consumption of fossil fuels, which are a finite resource. *Climate Certification of Food* is a certification system for the production and distribution of food that deals with issues relating to both these aspects. Climate and energy are related in that more efficient use of energy and replacement of fossil fuel sources with renewable sources decrease carbon dioxide emissions from energy consumption. Food production also generates considerable quantities of methane and nitrous oxide in various processes. In the climate certification system, demands are placed on measures to mitigate the climate impact within the production and distribution of food and thereby decrease emissions of carbon dioxide, methane and nitrous oxide. A fundamental requirement for accreditation in the system is that the operation also has another quality certification, placing requirements within environmental protection, animal welfare and social responsibility. The background to this is that climate is only one part of the important sustainability issues that must be addressed. In order to work towards sustainable development in the long-term, there is a need for parallel work on the environment, ethics, animal welfare and social welfare.

These regulations will be continually updated as information becomes available on methods to mitigate the climate impact within food production and distribution. Improvements will take the form of revisions to the regulations at regular intervals. Changes to these regulations will be made from 1 January 2011 at the earliest.

## Aim

The production and distribution of food generate approximately 20% of total emissions of greenhouse gases in Sweden. The aim of these regulations is to enable consumers to choose products that are produced with a lower climate impact and to allow producers to market their produce to consumers on the basis of measures introduced to mitigate the climate impact. These measures are based on scientific principles produced by leading researchers within environmental science and food science. The underlying data that provide the foundation for these regulations can be found at [www.klimatmarkningen.se](http://www.klimatmarkningen.se).

## Scope of the regulations

The regulations were established with the objective of essentially decreasing the climate impact, with consideration given to aspects regarded as being practically and economically achievable at the present time. In addition, some provisional guidelines/recommendations are provided because there is currently a lack of knowledge within certain areas. These regulations will be revised when more reliable data from scientific studies become available. The regulations were established by the project's steering group and apply until the next revision.

The regulations cover the farm, crop production, greenhouse cultivation, milk production, beef production, pig production, egg production, fisheries and transport. There is also an introductory chapter with general regulations that apply to all members of the system. In autumn 2010, regulations will be presented for lamb production, chicken production, processing and packaging. Regulations for aquaculture and imported products will be developed during 2010 and 2011.

The regulations for the farm, crop production, animal rearing and greenhouse cultivation are primarily developed for Sweden and comparable conditions. The regulations in their entirety are intended to encompass the production process from the manufacture of all production inputs used up to delivery to the supermarket and distribution from the farm gate to the supermarket unloading bay. Within fisheries, the regulations cover activities on boats and have no geographical limitation.

The regulation chapters in this document are divided up into targets, actual regulations and recommendations. The targets describe what we wish to achieve, the regulations describe what is required for accreditation and the recommendations describe additional measures that can be implemented to decrease the climate impact of the production enterprise. The recommendations indicate the desired improvements within an area and may be introduced as regulations in the future.

## Definitions and abbreviations

**Alternative refrigerants** are ammonia, which has a GWP value of 0, and carbon dioxide, which has a GWP value of 1.

**Break crop** is a crop that can have a yield-enhancing effect in cereal-dominated crop rotations, e.g. through providing a pre-crop soil fertility effect from roots, plant residues, etc. and through exerting an inhibiting effect on soil-borne fungi and insects. Examples of break crops are leys, linseed and oilseed plants.

**Carbon dioxide equivalent** (CO<sub>2</sub><sup>e</sup>) is a unit to compare the climate impact of different gases, expressed in amount of carbon dioxide with the same climate impact.

**Energy mapping** is a systematic way to evaluate current energy consumption and to identify ways to reduce consumption.

**FCR** stands for feed conversion ratio and shows the amount of feed required to produce one kilogram of fish. The figure also includes the proportion of the feed lost as waste.

**Fertilisation plan** is a tool for planning fertiliser use within the farm. The basis for the fertilisation plan is the amount of manure available on the farm, analytical data on the manure and soil mapping data for the individual fields. The fertilisation plan is a way of optimising fertiliser use with regard to environment and yield.

**GWP** stands for Global Warming Potential and is a measure of the potential greenhouse effect of a gas in relation to the same amount of carbon dioxide. GWP is often given in a 100-year perspective.

**HDI** or Human Development Index is a measure of the development status of a country or region as calculated by the United Nations Development Programme (UNDP). It includes gross domestic product (GDP) and welfare parameters such as literacy, life expectancy, income, etc. HDI is given on a scale from 0 to 1. The index is updated annually.

**IAC** stands for IFOAM Accreditation Criteria.

**IBS** stands for IFOAM Basic Standards.

**IFOAM** stands for International Federation of Organic Agriculture Movements, which is a world-wide cooperative organisation for organic production.

**ISO** stands for International Organization for Standardization and is an international organisation that develops and publishes standards.

**Key data** are measures or values providing information that allows comparative analysis. Key data are used to highlight and promote an essential aspect of an enterprise. They are an attempt to simplify/consolidate fundamentally complicated conditions, often those that are particularly important for the ability of an enterprise to operate.

**Life cycle assessment (LCA)** is a compilation and assessment of the potential environmental impact of a product during its entire life cycle, from procurement of raw materials or natural resources to final disposal. Comparisons are made using e.g. the international ISO standard for LCA; ISO 14040.

**Life cycle costs** are the total costs of a product during production, use and disposal of the waste.

**Life cycle perspective** means that account is taken of the potential environmental impact of a product or service during its entire life cycle.

**MSC** stand for Marine Stewardship Council and is an international system for assessing fish stocks within the fisheries industry for sustainable fishing.

**Neighbouring farm** is a farm lying within a distance such that recycling of manure can be relevant to create sustainable flows of plant nutrients and manure.

**Peat soil** or organic soil is an agricultural soil that contains at least 35% organic material, i.e. carbon-rich material (FAO 1998).

**Pre-crop effect** is the effect on the soil of the preceding crop, e.g. in terms of improving soil structure, available nutrients, etc.

**Production** refers to the enterprise within a business that is covered by the climate certification scheme. Within the agricultural sector, it is often the entire farm business and all its production enterprises. Within other types of production it can be a question of certain operations in a company, or certain activities that are clearly separated in time and space.

**Renewable energy sources** include existing hydro power, solar energy and biofuels. Waste heat is also included in this concept.

**Row crops for human consumption** include vegetables, maize and potatoes.

**RSPO** stands for Round Table on Sustainable Palm Oil and is an international organisation for devising standards for sustainable palm oil growing and certification at all stages.

**RTRS** stands for Round Table on Responsible Soy Association and is an international organisation for devising standards for sustainable soybean growing and certification at all stages.

**Support areas** are those defined by the Swedish Board of Agriculture within the framework of the environmental subsidy system. A map can be downloaded from the Swedish Board of Agriculture website: <http://www.sjv.se>

**Synthetic refrigerants** include HFC (hydrofluorocarbon), CFC (chlorofluorocarbon) and HCFC (hydrochlorofluorocarbon), with a GWP value of 1 000-10 000 or even higher. CFC are referred to in everyday language as freons.

**Use efficiency** is a measure of how efficiently a resource is used, i.e. it shows the proportion of the input resources that has actually been utilised.

**Waste heat** is defined as heat generated in a process, e.g. an industry, that can be utilised as a resource.

**Winter storage** is when a product can be stored from the end of the growing season until the start of the next growing season.

# 1 GENERAL REGULATIONS

## 1.1 Regulations for members

*Compliance with these regulations is voluntary and is open to all those operating an enterprise within the production and distribution of food. The general regulations describe the conditions that must be met for membership of the system and the requirements for retaining certification.*

### 1.1.1 Quality-certified enterprise

A fundamental condition for being awarded the right to climate-label products according to these regulations is that the production enterprise has been approved according to a certification system that meets the requirements in 1.3.1.

### 1.1.2 Labelling

When the product/s of an enterprise have been certified according to these regulations they may be marketed with reference to the concept 'Climate certified Production' according to Climate Certification for Food 2010:2.

### 1.1.3 Entry requirements

In order for an enterprise to gain the right to label its products, on entry into the system it must comply with all the critical items in the regulations. These are marked **(K)** at the end of the text describing the relevant regulation. The requirement to comply with other regulations is controlled by the exemptions section within the framework of the certification system according to the requirements in 1.3.1 that constitutes the foundation of climate certification.

## 1.2 Requirements on certification body

*The aim of these requirements is to allow fair treatment during audit, regardless of the certification body chosen by the member.*

### 1.2.1 Accreditation requirement

Certification must be carried out by an independent certification company that is accredited for product certification according to EN 45011 and that has an accreditation remit which includes one of the certification systems according to 1.3.1 and the regulations therein.

*Accreditation means that regulations are already in place regarding how e.g. audits and deviations are to be handled and the requirements on the auditors. The regulations below are a complement to the requirements in the accreditation system and apply in particular for climate regulations.*

### 1.2.2 Audit

The aim of the audit is to ensure that the regulations are observed. It is also a help in improvement work within the business. The audit must be carried out within the framework of the certification system that constitutes the foundation of climate certification, by an independent certification company that is accredited for EN 45011 and that has an accreditation remit which includes one of the certification systems according to 1.3.1 and the regulations therein. This means that the procedures for climate certification follow the procedures for the certification system used as a base.

### **1.2.3 Dealing with deviations**

Deviations from the regulations are dealt with according to the certification system used as a base.

### **1.2.4 Qualification requirements for auditors**

The person carrying out the audit according to these regulations must have good knowledge of the climate impact of the production and distribution of food and measures to mitigate its climate impact. This means among other things having knowledge of how various activities, processes and measures within the production system affect carbon dioxide, methane and nitrous oxide emissions, how various types of climate declaration or climate calculations are structured, differences in various international quality certification systems for cultivation of raw materials for feeds, and knowledge of energy mapping and energy saving. The auditor must complete a training programme and must also undertake a full day of additional training per year to keep up with developments in the area. Candidate auditors are offered training in these matters and on completion of the course are regarded as meeting the training requirements.

## **1.3 Requirements in the standard**

*In order to be approved according to these regulations, all enterprises must have a background quality certification that sets fundamental requirements regarding environmental protection, animal welfare and social responsibility. The aim of this is to emphasise that climate and energy issues are part of the work for sustainable development within food production.*

### **1.3.1 Quality certified**

A requirement for certification according to these regulations is that the production enterprise has a third party certification that sets requirements within the areas of environmental protection, animal welfare and social responsibility and that is approved for certification under accreditation according to EN 45011, or equivalent accreditation system. The regulatory body for Climate Certification of Food tests and approves those certification systems that can constitute the foundation for climate certification. The verification requirements for these regulations contain a list of certification systems that are currently approved.

### **1.3.2 Distinguishability and traceability**

This set of regulations may only be applied in its entirety. When a product undergoes handling that is still not covered by these regulations, the product may be marketed with reference to these regulations if the certification company can guarantee distinguishability and traceability.

## 2 THE FARM



*The regulations in this chapter apply to farms that have animal, dairy or crop production enterprises.*

### 2.1 Basic requirements

#### 2.1.1. Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 1 [General Regulations].

### 2.2 Energy consumption on the farm

*The aims of these regulations are to improve the efficiency of energy consumption and to replace fossil energy with renewable energy at farm level and thereby decrease the climate impact of the farm.*

#### 2.2.1 Energy mapping

An energy map must be drawn up at farm level of energy consumption in the various processes and activities on the farm. Energy mapping must be carried out on entry to certification and revised every five years. **(K)**

#### **Recommendation**

Indirect energy consumption includes the energy used in production of animal feed and mineral fertiliser. On some farms the indirect energy consumption can be considerable.

- Energy mapping should also include indirect energy consumption in the form of inputs such as feed and mineral fertiliser.

#### 2.2.2 Key data for energy

Key data must be calculated on the amount of energy used in relation to farm area and in relation to the number of animal places or livestock units.

#### 2.2.3 Increasing energy efficiency

Based on the energy mapping, the producer must draw up a three-year plan on how to increase the efficiency of energy consumption. The business must be able to demonstrate improved efficiency of energy consumption within three years of entry into certification. **(K)**

#### 2.2.4 Decreasing the use of fossil energy

A list must be drawn up of possible ways of replacing fossil fuel on the farm with renewable fuel.

### **2.2.5 Renewable electricity**

Electricity consumption in the business must be based 100% on electricity from renewable energy sources, for example environmentally labelled electricity or equivalent. This applies to new electricity contracts signed before 1 January 2012 at the latest. **(K)**

### **2.2.6 Consideration of energy efficiency in investments**

When the business is making a new investment or reinvesting in equipment or in constructing or renovating a building, the energy efficiency must be taken into account. The choice of system must be documented and must show the consideration given to energy consumption in a life cycle perspective. **(K)**

## **2.3 Storage of food, use of refrigerants**

*The aim of the regulations is to decrease the climate impact from storage of food products without compromising product quality or sustainability.*

### **2.3.1 Use of refrigerants**

A plan must be drawn up for phasing out synthetic refrigerants for products that are stored for more than one week. When new investments are made, alternatives that do not contain synthetic refrigerants must be selected.

## **2.4 Transport and use of machinery within the farm and in the sale of products**

*The aim of the regulations is to decrease the climate impact from transport and use of machinery within the farm and during transport of products from the farm.*

### **2.4.1 Ecodriving**

The farm must have a plan for training all the drivers who work regularly in its operations in economical driving (ecodriving). When contractors are employed, e.g. machinery contractors, the company used must have a plan for training its drivers in eco-driving. Training of the farm's own drivers must be completed by 31 December 2012 at the latest. This training must be updated at least every five years.

### **Recommendation**

- When employing a haulage firm, the company chosen should be affiliated to the sector's system for climate labelling of transport. This system is currently under development and is expected to be operational by 2011.

## **2.5 Cultivation of peat soils**

*The aim of the regulations is to decrease the oxidation of organic material from peat soil and thereby decrease the climate impact of cultivating these soils. Knowledge of the climate impact of peat soils is limited. Revisions may be made to these regulations as new knowledge becomes available within the area.*

### **2.5.1 Definitions**

The concept peat soil is described in the Definitions section. A field is regarded as consisting of peat soil if peat soil covers more than half the area of the field.

### **2.5.2 Long-term grass ley**

Fields with peat soils must be kept covered with long-term grass ley. Soil tillage to reseed the ley may only be carried out after a period of at least five years.

### **2.5.3 Exceptions to the requirement for long-term ley**

As an exception to 2.5.2, a field with peat soil may be cropped with agricultural crops and using methods other than long-term ley in the following cases:

- When the farmer has row crops for human consumption in the crop rotation, and can also demonstrate that the oxidation rate of soil-bound carbon over a crop rotation is decreased by 15% in relation to the crop rotation used previously.
- When the farmer already has row crops for human consumption in the crop rotation and also has at least three years of grass ley in the same crop rotation. Fields that have not previously had row crops for human consumption, or where such crops were grown more than seven years ago, may not apply this exception.



## 3 CROP PRODUCTION

*The regulations in this chapter apply to field crops, e.g. cereals, pulses, potatoes, vegetables, fruit and berries.*

*The aim of the regulations is to decrease the climate impact of crop production. One of the most important climate measures within crop production is to decrease the amount of leachable nitrogen left in the soil after harvest. Measures to decrease the amount of excess nitrogen vary widely between farms, so few concrete requirements are included in the regulations in this regard. Instead, there are requirements for the producer to have a plan for improvement work that is specific for the farm in question to decrease excess nitrogen in the soil after harvest. In future editions of the regulations and as knowledge becomes available within this area, requirements may be introduced on lower doses of nitrogen or other measures.*

### 3.1 Basic requirements

#### 3.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 1 [General Regulations], Chapter 2 [The Farm] and Chapter 12 [Transport].

### 3.2 Nitrogen flows

#### 3.2.1 Nitrogen balance on the farm

A nitrogen balance at farm level must be drawn up annually. **(K)**

#### 3.2.2 Key data for nitrogen

Key data on nitrogen utilisation on the entire farm must be produced. These key data must be monitored over a five-year period.

#### 3.2.3 More efficient use of nitrogen in farm crop production

Key data must be produced annually for crop production on the farm to control the supply of new nitrogen (N) per ton of harvested product. By new nitrogen is meant nitrogen from mineral fertiliser, purchased manure and/or nitrogen fixed by N-fixing crops. Such key data must be reviewed and a plan must be provided for improving the use efficiency of new N per ton of harvested product and for decreasing the amount of excess new nitrogen in the production enterprise. A review must be carried out at least every five years. **(K)**

#### 3.2.4 Increasing nitrogen use efficiency per field or crop

The nitrogen use efficiency must be documented annually at field or crop level, with suggested measures to increase the degree of use efficiency viewed over a three-year perspective. These measures must be implemented within three years.

#### 3.2.5 Fertilisation plan

An annual fertilisation plan must be prepared for each field on the basis of expected yields that lie within the range of those obtained on the farm during a five-year period. Account

must be taken of the total nutrient content of farmyard manure, pre-crop effects and green manure/ley in the crop rotation. **(K)**

### **3.3 Use of manure**

#### **3.3.1 Timing of manure application**

Urine or slurry must not be applied to winter cereals or legumes.

#### **3.3.2 Incorporation of manure**

Manure must be incorporated within four hours of application on open soil. An exception is made for deep litter manure.

#### **3.3.3 Analysis of manure**

All manures must be analysed in terms of nitrogen content so that the optimal dose can be decided. Such analyses must be carried out every year for three years. If the analyses show stable values, additional analyses need only be made after changes in animal diet, management system or other essential change in production. An exception to this regulation is made for farmyard manure and deep litter manure. No exception is made for poultry manure. **(K)**

### **3.4 Use of specialist fertiliser**

#### **3.4.1 Dried manure**

Dried manure may only be used if the drying is carried out using 100% renewable energy sources, for example environmentally-labelled electricity or equivalent. **(K)**

### **3.5 Purchased mineral fertiliser**

#### **3.5.1 Mineral fertiliser**

Purchased mineral fertiliser used in the enterprise must not have given rise to emissions exceeding 4 kg CO<sub>2</sub>-equivalents per kg N, which must be demonstrated in an openly reported calculation provided by the supplier. From 1 January 2012, fertiliser that has given rise to emissions exceeding 3 kg CO<sub>2</sub>-equivalents per kg N may not be used. **(K)**

### **3.6 Feed production**

#### **3.6.1 Legumes in ley**

At least 10% by weight of the seed mix in leys must be comprised of legumes. **(K)**

#### **3.6.2 Fertilising mixed leys**

When fertilising mixed leys, the Swedish Board of Agriculture guidelines for reduced fertilisation of mixed leys in relation to clover fraction, including manure, must be observed. **(K)**

#### **Recommendation**

- When leys and green manures are ploughed under, large amounts of soluble nitrogen can be produced and this can lead to high emissions of climate gases. However, there are no requirements on the time for ploughing under ley/green

manure since the choice of effective measures varies within the country and between farms. The producer should be able to show that account has been taken of the large amounts of nutrients released into the soil after break-up of leys, particularly at times when the crop cannot take up nutrients.

## **3.7 Crop rotation**

### **3.7.1 Break crop on cereal farms**

On farms with a cereal-dominated crop rotation, break crops such as ley, oilseed crops or legumes must be included in the crop rotation. In a seven-year crop rotation, at least two years must be used for break crops. In a six-year crop rotation or shorter, at least one year must be used for a break crop.



## 4 GREENHOUSE

### Greenhouse cultivation of vegetables, pot plants and flower bulbs

#### 4.1 Basic requirements

##### 4.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 1 [General Regulations] and Chapter 12 [Transport].

#### 4.2 Energy consumption

*The aim of these regulations is to decrease energy consumption and the use of non-renewable energy in greenhouse production and thereby decrease the negative climate impact of such enterprises.*

##### 4.2.1 Energy mapping

An energy map must be drawn up of energy consumption for heating, lighting, cooling and carbon dioxide production and the use of electricity. Energy consumption must be divided into renewable and fossil energy. Energy mapping must be carried out on entry to certification and revised every five years. **(K)**

##### **Recommendation**

Indirect energy consumption includes the energy used in the production of fertilisers, which in some enterprises can be considerable.

- Energy mapping should also include indirect energy consumption in the form of inputs such as purchased fertiliser and growth substrate.

##### 4.2.2 Key data for energy

Key data must be produced on the amount of energy used in relation to the amount of crop produced and per square metre. For pot plants the key data used are per unit area, not per amount produced.

##### 4.2.3 Increasing energy efficiency

Based on the energy mapping, the producer must draw up a three-year plan on how to increase the efficiency of energy consumption. The business must be able to demonstrate improved efficiency of energy consumption within three years of entry into certification. **(K)**

##### 4.2.4 Energy conversion

A plan must be drawn up on conversion to renewable energy sources, for example environmentally labelled electricity, biofuel or equivalent. The plan must be implemented within three years. **(K)**

#### **4.2.5 Use of non-renewable energy**

*Conversion to renewable energy sources is of great importance for the climate impact from greenhouse production. Future revisions to the regulation may increase these levels with the aim of further decreasing the climate impact.*

One of the following two regulations must be fulfilled:

- Combined energy consumption for heating, lighting, cooling and manufacture of carbon dioxide must consist to at least 80% of renewable energy sources on an annual basis, for example environmentally labelled electricity or equivalent.
- Fossil energy must not exceed an average of 2.5 kilowatt hours per square metre and cultivation week during the culture period. **(K)**

#### **4.2.6 Energy saving measures**

Enterprises with heated greenhouses must use energy wrap or bubble wrap when culture takes place in the period 15 October to 1 April. This does not apply if the greenhouse is a double material structure. **(K)**

### **4.3 Use of refrigerants**

*The aim of the regulations is to decrease the climate impact from storage of food products without compromising product quality or sustainability.*

#### **4.3.1 Use of refrigerants**

A plan must be drawn up for phasing out synthetic refrigerants for products that are stored for more than one week. When new investments are made, alternatives that do not contain synthetic refrigerants must be selected

### **4.4 Transport and use of machinery within the business and in the sale of products**

*The aim of the regulations is to decrease the climate impact from transport and use of machinery within the business and during transport of products from the farm.*

#### **4.4.1 Ecodriving**

The business must have a plan for training all the drivers who regularly work in its operations in ecodriving. When contractors are employed, e.g. machinery contractors, the company used must have a plan for training its drivers in ecodriving. Training of the business's own drivers must be completed by 31 December 2012 at the latest. This training must be updated at least every five years.

#### **Recommendation**

- When employing a haulage firm, the company chosen should be affiliated to the sector's system for climate labelling of transport. This system is currently under development and is expected to be operational by 2011.

## 5 MILK PRODUCTION



*The aim of the regulations is to decrease the climate impact within milk production.*

### 5.1 Basic requirements

#### 5.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 1 [General Regulations], Chapter 2 [The Farm], Chapter 3 [Crop Production] and Chapter 12 [Transport].

### 5.2 Animal health

*The aim of the regulations is to decrease the methane emissions from milk production. This is strongly related to animal health. The reason is that healthy and contented animals produce more milk and meat, so the climate impact caused by each animal can be divided across more products.*

#### 5.2.1 Health auditing system

The dairy farm must be a member of an established health auditing system with health parameters for animal welfare. These parameters must be monitored in a systematic way and deviations documented. An analysis must be made of the reasons for deviations and the measures that must be implemented. **(K)**

### 5.3 Feeding

*The aim of the regulations is to decrease the climate impact associated with feeding animals. How the feed is produced, choice of individual ingredients and efficient feed utilisation are important for climate gas emissions from milk production. When food is grown locally there are opportunities to use the manure more efficiently for cereals or other crops and transport is decreased. In addition, the negative climate impact is decreased with decreased use of soya and other foodstuffs with large negative climate impact during cultivation.*

#### 5.3.1 Monitoring feeding

The nutrient content in harvested forage must be analysed and feeding must be reviewed annually. Wasted feed and overfeeding must be dealt with. In the review, the feed consumption rate must be compared in relation to the planned consumption in the diet. The review must produce a calculation of the fraction of feed in the diet produced on-farm or in partnership with neighbouring arable farms. **(K)**

#### 5.3.2 Climate impact of purchased feed

It must be shown that account has been taken of the climate impact in the choice of purchased feed. When feed mixes are bought in, the feeds selected must be climate-calculated and have verified low emissions of climate gases. The calculation method must be reported openly. This does not apply to purchase of feeds from neighbouring farms (see Definitions section for an explanation of neighbouring farms). **(K)**

## **Recommendation**

If grain fertilised with mineral fertiliser is purchased, it should be fertilised with N-mineral fertiliser produced with low emissions of climate gases, at most 4 kg CO<sub>2</sub>-equivalents per kg N, according to an openly reported calculation provided by the manufacturer. From 1 January 2012, purchased mineral-fertilised grain should be fertilised with mineral fertiliser where the production emissions are at most 3 kg CO<sub>2</sub>-equivalents per kg N.

### **5.3.3 Purchased soya and/or palm kernel products**

Any feed used that contains soya or palm kernel products must be able to fulfil one of the following three requirements:

- The milk producer must be able to present a guarantee from the manufacturer that the crops have been produced on land where primary ecosystems or High Conservation Value Areas have not been destroyed to create open arable land since 1990.
- IFOAM-certified soya or palm kernel products must be used.
- A maximum of 100 kg soya or palm kernel expeller may be used per cow and year, and from 1 January 2013 any soya and palm kernel products used must be sustainability-certified according to an internationally accepted system, e.g. RTRS, RSPO or ProTerra.

### **5.3.4. Locally produced feed**

Those feeding dairy animals must be able to fulfil one of the following requirements:

- The proportion of feed for dairy cows and recruitment heifers that is produced on-farm or in partnership with neighbouring arable farms must be at least 60%, and the farmer must provide evidence of continuous improvement work to achieve a level of 70% home-produced feed.
- In support areas F, 1-3, 4a and 5a, the proportion of feed for dairy cows and recruitment heifers that is produced on-farm or in partnership with neighbouring arable farms must be at least 50%. When purchasing ready-made feed or concentrate, the alternative with the lowest climate impact must be chosen. The choice must be documented and comparisons made in the feed database listed in the instruction documents that accompany these regulations. Evidence must also be provided of analyses of the company's opportunities to grow a larger proportion of feed on-farm. Such analyses must contain an inventory of the possibilities for cooperating with neighbouring farms and farms in the region.

## 6 BEEF



*The aim of the regulations is to decrease the climate impact within beef production.*

### 6.1 Basic requirements

#### 6.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 1 [General Regulations], Chapter 2 [The Farm], Chapter 3 [Crop Production] and Chapter 12 [Transport].

#### 6.1.2 Cull cows from dairy herds

Meat from dairy cows that have followed the regulations in Chapter 4 [Milk Production] can be climate-certified without observing the regulations below for beef production.

### 6.2 Animal health

*The aim of the regulations is to decrease the climate gas emissions from beef production through prioritising animal health and good animal welfare. Healthy and contented animals have faster growth, which decreases the climate impact for the amount of meat produced.*

#### 6.2.1 Health auditing system

The farm must be a member of an established health auditing system with health parameters for animal welfare. These parameters must be monitored in a systematic way and deviations documented. An analysis must be made of the reasons for deviations and the measures that must be implemented. **(K)**

### 6.3 Production efficiency

#### 6.3.1 Slaughter age, average at herd level

- The highest permissible slaughter age for bulls is 19 months. **(K)**
- The highest permissible slaughter age for steers and heifers is 25 months. **(K)**

#### 6.3.2 First calving age

For suckler herds, the guideline value for age at first calving is at most 26 months as a herd average. A remedial plan to rectify any deviations from this must be drawn up in consultation with a veterinary surgeon or advisory officer.

#### 6.3.3 Calving interval

For suckler herds, the guideline value for calving interval is at most 13 months as a herd average. A remedial plan to rectify any deviations from this must be drawn up in consultation with a veterinary surgeon or advisory officer.

## 6.4 Feeding

*The aim of the regulations is to decrease the climate impact associated with feeding animals. How the feed is produced, choice of individual ingredients and efficient feed utilisation are important for climate gas emissions from production. A large proportion of high quality ley and grazing in the diet decreases the climate impact of production. When food is grown locally there are more opportunities to use the manure and transport is decreased. Promoting an increase in grazing also promotes carbon storage in the soil.*

### 6.4.1 Monitoring feeding

The nutrient content in harvested forage must be analysed with respect to protein and digestible energy and feeding must be reviewed annually. Wasted feed and overfeeding must be dealt with. In the review, the feed consumption rate must be compared in relation to the planned consumption in the diet. The review must produce a calculation of the fraction of feed in the diet produced on-farm or in partnership with neighbouring arable farms. **(K)**

### 6.4.2 Climate impact of purchased feed

It must be shown that account has been taken of the climate impact in the choice of purchased feed. When feed mixes are bought in, the feeds selected must be climate-calculated and have verified low emissions of climate gases. The calculation method must be reported openly. This does not apply to purchase of feeds from neighbouring farms (see Definitions section for an explanation of neighbouring farms). **(K)**

#### **Recommendation**

If grain fertilised with mineral fertiliser is purchased, such N-mineral fertiliser should have low production emissions of climate gases, at most 4 kg CO<sub>2</sub>-equivalents per kg N, according to an openly reported calculation model provided by the manufacturer. From 1 January 2012, purchased mineral-fertilised grain should be fertilised with mineral fertiliser where the production emissions are at most 3 kg CO<sub>2</sub>-equivalents per kg N.

### 6.4.3 Purchased soya and/or palm kernel products

Soya and/or palm kernel products are not permitted in the diet.

### 6.4.4. Forage fraction

At least 70% of the diet during the housed period must consist of roughage and at least 50% must consist of grass forage.

### 6.4.5. Grazing

The animals must be kept on grazing (not exercise strips) during the grazing season.

### 6.4.6. Locally produced feed

The proportion of feed used in beef production that is produced on-farm or in partnership with neighbouring arable farms must be at least 70%.

# 7 LAMB PRODUCTION

## 7.1 Basic requirements

### 7.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 1 [General Regulations], Chapter 2 [The Farm] and, Chapter 3 [Crop Production]

## 7.2 Animal health

*The aim of the regulations is to decrease the climate gas emissions from lamb production through prioritising animal health and good animal welfare. Healthy and content animals have faster growth and thus more efficient production, which decrease the climate impact for the amount of meat produced.*

### 7.2.1 Health auditing system

The farm must be a member of an established health auditing system with health parameters for animal welfare. These parameters must be monitored in a systematic way and deviations must be documented. An analysis must be made of the reasons for deviations and the measures that must be implemented. **(K)**

This requirement can be met either:

- a) By joining an established health auditing system for sheep and lambs with at least one annual visit by a veterinary surgeon
  - or
  - b) through the producer drawing up and implementing an on-farm programme for preventive healthcare. This programme must include at least one annual visit to the herd by a veterinary surgeon.
- Irrespective of the option chosen, consideration must be given to the following health parameters and in the event of deviations a remedial plan must be drawn up in consultation with a veterinary surgeon or advisory officer.
    - Drop-out rate of ewes
    - Mortality in different animal groups (guideline max. 10% before weaning for lambs)
    - Total number of veterinary treatments
    - Hoof health
    - Use of antibiotics or other pharmaceuticals
    - Number of disease recordings at slaughter compared with the national average.

### Verification requirements

- It must be possible to calculate lamb mortality and ewe drop-out rate from the herdbook or other records.
- The results of assessments at slaughter must be saved for three years.
- A medication and procedure journal must be kept.
- Any remedial plan required must be in place

## 7.3 Production efficiency

### 7.3.1. Slaughter age

The highest permissible slaughter age for lambs that are kept for at least 75% of the time on grazing is 190 days. 5% of these lambs may be exempted from the 190 day limit but must be slaughtered at max. 280 days of age. **(K)**

The highest permissible slaughter age for lambs that are kept for less than 75% of the time on grazing is 140 days as a herd average. **(K)**

#### Verification requirements

- A herdbook approved by a national body must be used on the farm. It must be saved for 3 years.
- The average age of lambs at slaughter must be calculated and reported annually.

## 7.4 Feeding

*The aim of the regulations is to decrease the climate impact associated with feeding the animals. How the feed is produced, choice of individual ingredients and efficient feed utilisation are important for climate gas emissions from production. High quality ley and grazing in the diet decreases the climate impact of production. When feed is grown locally there are more opportunities to use the manure and transport is decreased. Promoting an increase in grazing also promotes carbon storage in the soil.*

### 7.4.1 Monitoring feeding

The nutrient content in farm-harvested or purchased forage must be analysed with respect to dry matter, protein and digestible energy and feeding must be reviewed annually. Diets must be calculated for all groups of animals. Wasted feed and overfeeding must be dealt with. In the review, the feed consumption rate must be compared in relation to the planned consumption in the diet. The review must produce a calculation of the fraction of feed in the diet produced on-farm or in partnership with neighbouring arable farms. **(K)**

#### Verification requirements

- Analyses of forage must be available, with at least one analytical result per cut
- Documentation on feed monitoring must be available in which the feed consumption rate is compared with the planned consumption and the percentage waste is estimated.
- Proposed measures must be specified to deal with any feed losses and overfeeding.
- Documentation of the percentage of home-produced feed must be available.
- Diets plans must be in place and the tools for calculating these must be reported.

### 7.4.2 Climate impact of purchased feed

It must be shown that account has been taken of the climate impact in the choice of purchased feed. When feed mixes are bought in, the feeds selected must be climate-calculated and have verified low emissions of climate gases. The calculation method must be reported openly. This does not apply to purchase of feeds from neighbouring farms, see opening section for definition of neighbouring farm. **(K)**

#### Verification requirements:

- Documentation on purchased feed must be available to show that the feeds selected have low emissions compared with other feeds, or are purchased from a neighbouring farm.
- The method used for calculating the climate impact must be reported by the supplier.

### **Recommendation**

If grain fertilised with mineral fertiliser is purchased, such N-mineral fertiliser should have low production emissions of climate gases, at most 4 kg CO<sub>2</sub>-equivalents per kg N, according to an openly reported calculation model provided by the manufacturer. From 1 January 2012, purchased mineral-fertilised grain should be fertilised with mineral fertiliser where the production emissions are at most 3.6 kg CO<sub>2</sub>-equivalents per kg N

### **7.4.3 Purchased soya**

Soya is not permitted in the diet from 1 January 2012

### **Verification requirements**

- Declarations of contents and delivery notes for purchased feed must be available. For purchases from neighbours, the amount, type, delivery date and seller of the feed must be reported.
- If must be possible to show the composition of the feeds.

### **7.4.4. Forage fraction**

At least 70% of the diet for ewes and rams during the housed period and at least 50% of the diet for lambs after weaning must consist of good quality forage.

During the grazing period, at least 90% of the diet for all animal categories must consist of forage, as a herd average.

The proportion of forage for ewes near lambing or suckling must be at least 60%. During a 3-month period early in the lactation, the forage fraction may be decreased to 50%. This period can start earlier if growth of the foetus is preventing forage consumption in ewes near lambing.

### **Verification requirements**

- Documentation to confirm this must be available on request. By forage is meant grazing, silage, hay, straw, green forage, beet pulp and root vegetables.

### **7.4.5. Grazing**

The animals must be kept open grazing (not exercise strips) during the grazing season.

### **Verification requirements**

- a) The animals must have access to grazing 24 hours a day.
- b) The grazing period (for Swedish conditions 1 May – 15 October) must be at least 4 months in the counties of Blekinge, Skåne and Halland in southern Sweden and at least 3 months in other counties. Animals that will be slaughtered during the grazing period do not need to fulfil

this requirement before slaughter, but as with other animals must be kept on grazing up to slaughter.

c) The animals may be kept indoors during the grazing in certain circumstances. The reason and time must be recorded in the journal:

– if this is necessary to protect the animals from abnormal weather conditions, severe insect attacks or an immediate danger of predator attack that cannot reasonably be removed in any other way

– if this is necessary to protect the land from damage in abnormal weather conditions – if the animals have been listed for slaughter and will be slaughtered before 15 June of the same year

– if the animals have to be tended, treated or handled in a way that is not suitable outdoors.

#### **7.4.6. Locally produced feed**

The proportion of feed used in the housed period in lamb production that is produced on-farm or in partnership with neighbouring arable farms must be at least 70%.

#### **Verification requirements:**

- Documentation on the proportion of feed produced on the farm compared with purchased feed, confirmed through invoices or equivalent, showing that at least 70% is home-produced.

## 8 PIG PRODUCTION

*The aim of the regulations is to decrease the climate impact within pig production.*

### 8.1 Basic requirements

#### 8.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 2 [The Farm], Chapter 3 [Crop Production] and Chapter 12 [Transport].

### Animal health

*The aim of the regulations is to decrease the climate gas emissions from pig production through prioritising animal health and good animal welfare. Healthy and contented animals have faster growth, which decreases the climate impact for the amount of meat produced.*

#### 8.2.1 Health auditing system

The pig production enterprise must be a member of an established health auditing system with health parameters for animal welfare. These parameters must be monitored in a systematic way and deviations documented. An analysis must be made of the reasons for deviations and the measures that must be implemented. **(K)**

This regulation is fulfilled either:

- a) Through membership of an established health programme for pigs with at least one visit by a veterinary surgeon per year; or
- b) Through the actual producer developing and implementing a programme with measures for preventative animal healthcare. This programme must involve at least one visit by a veterinary surgeon to the herd per year.
  - Mortality in different animal groups (the guideline value for number of piglets produced per sow and year is 22 and that for mortality in the fattening pig phase is 3%)
  - Total number of veterinary treatments
  - Use of antibiotics or other medicines
  - Number of disease recordings at slaughter compared with the national average.

### 8.3 Feeding

*The aim of the regulations is to decrease the climate impact associated with feeding animals. How the feed is produced, choice of individual ingredients and efficient feed utilisation are important for climate gas emissions from production. When food is grown locally there are opportunities to use the manure more efficiently for cereals or other crops and transport is decreased. In addition, the negative climate impact is decreased with decreased use of soya and other foodstuffs with a large negative climate impact during cultivation*

### **8.3.1 Nitrogen use efficiency**

Quantification of the nitrogen balance over the animal (nitrogen in feed/nitrogen in slaughter animal) must be carried out and reviewed annually.

### **8.3.2 Monitoring feeding**

The nutrient content in home-grown feed must be analysed and feeding must be reviewed annually. Wasted feed and overfeeding must be dealt with. **(K)**

### **8.3.3 Climate impact of purchased feed**

It must be shown that account has been taken of the climate impact in the choice of purchased feed. When feed mixes are bought in, the feeds selected must be climate-calculated and have verified low emissions of climate gases. The calculation method must be reported openly. This does not apply to purchase of feeds from neighbouring farms or the use of waste products from the food industry (see Definitions section for an explanation of neighbouring farms). **(K)**

### **8.3.4 Locally produced feed**

The proportion of feed that can be produced on the farm or in partnership with neighbouring arable farms must be at least 70%.

### **8.3.5 Purchased soya**

The soya inclusion rate in the diet of all animals must not exceed 5% as a herd average.

From 1 January 2013, the soya used must be sustainability certified according to an internationally accepted system, e.g. RTRS, IFOAM or ProTerra. **(K)**

## **8.4 Manure management**

### **Recommendation**

Stored pig slurry should be covered with a tarpaulin or roof; a floating crust does not give a sufficient reduction in emissions.

# 9 EGG PRODUCTION

## 9.1 Basic requirements

### 9.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 1 [General Regulations], Chapter 2 [The Farm], Chapter 3 [Crop Production] and Chapter 12 [Transport].

## 9.2 Animal health

*The aim of the regulations is to decrease the climate emissions from egg production through prioritising bird health and good bird welfare. Healthy and contented birds give more eggs and eat less feed, giving more efficient production, which decreases the climate impact for the amount of eggs produced.*

### 9.2.1 Health auditing system

The farm must be a member of an established health auditing system with health parameters for animal welfare. These parameters must be monitored in a systematic way and deviations documented. An analysis must be made of the reasons for deviations and the measures that must be implemented. **(K)**

This regulation is fulfilled either:

- c) Through membership of an established health programme for poultry with at least one visit by a veterinary surgeon per year; or
- d) Through the actual producer developing and implementing a programme with measures for preventative animal healthcare. This programme must involve at least one visit by a veterinary surgeon to the farm per batch.

Regardless of the alternative fulfilled, account must be taken of the following health parameters and if any of these deviates from the normal, a remedial plan must be drawn up in consultation with a veterinary surgeon or advisory officer.

- a) Mortality (guideline value max. 5% in cage systems, max. 8% in systems with free-range hens regardless of whether they are allowed outdoors. These values are per batch).
- b) Laying percentage (guideline value given in the hybrid manual)
- c) Pecking injuries
- d) Feather loss
- e) Presence of mites
- f) Presence of ascaris worms.

## 9.3 Production efficiency

### 9.3.1 Feed conversion efficiency

A maximum of 2.1 kg feed per kg eggs may be used in cage systems, 2.3 kg feed per kg eggs in indoor floor systems and 2.4 kg feed per kg eggs in systems with free-range with access to the outdoors.

### 9.3.2 Nitrogen use efficiency

Quantification of the nitrogen balance over production (nitrogen in feed/nitrogen in eggs produced) must be carried out and reviewed per batch.

## 9.4 Feeding

*The aim of the regulations is to decrease the climate impact associated with feeding animals. How the feed is produced, choice of individual ingredients and efficient feed utilisation are important for climate gas emissions from production. Decreased soya use in the feed is desirable since soya production has a great climate impact. The permitted amount of soya at the present time is the lowest fraction allowed with the feedstuffs available on the market, but the aim is for the use of soya to decrease further over time when there are more feedstuffs with lower soya content available. Through careful calculation of the content of individual amino acids in the feed, nitrogen use efficiency can be improved.*

### 9.4.1 Monitoring feeding

The nutrient content in all feeds used must be analysed, even feeds produced on-farm. Feeding must be reviewed annually. Wasted feed and overfeeding must be dealt with. In the review, the feed consumption rate must be compared in relation to the planned consumption in the diet. **(K)**

### 9.4.2 Climate impact of purchased feed

It must be shown that account has been taken of the climate impact in the choice of purchased feed. When feed mixes are bought in, the feeds selected must be climate-calculated and have verified low emissions of climate gases. The calculation method must be reported openly. This does not apply to purchase of feeds from neighbouring farms (see Definitions section for an explanation of neighbouring farms). **(K)**

### 9.4.3 Purchased soya

The soya inclusion rate in the feed of production birds must not exceed 11% calculated over the entire production period. The recommended amount of soya is max. 5%.

From 1 January 2013, the soya used must be sustainability certified according to an internationally accepted system, e.g. RTRS, IFOAM or ProTerra. **(K)**

### 9.4.4 Mineral fertiliser use in cultivation of purchased feed

If the proportion of feed produced on the farm is less than half the total feed requirement, the following requirement must be fulfilled:

From 1 January 2013, at least 50% of purchased grain must be cultivated using mineral fertiliser with production emissions that have not exceeded 3 kg CO<sub>2</sub>-equivalents per kg N, which must be demonstrated in an openly reported calculation provided by the supplier.

## 9.5 Manure management

### **Recommendation**

Stored manure should be covered in a manure house or under roof.

# 10 CHICKEN PRODUCTION

## 10.1 Basic requirements

### 9.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, enterprises must comply with the regulations in Chapter 2 [The Farm], Chapter 3 [Crop Production] and Chapter 12 [Transport].

## 10.2 Animal health

### 10.2.1 Health auditing system

The farm must be a member of a health auditing system with health parameters for animal welfare. These parameters must be monitored in a systematic way and deviations documented. An analysis must be made of the reasons for deviations and the measures that must be implemented. *(K)*

This regulation is fulfilled either:

- e) Through membership of an established health programme for poultry with one annual visit by a veterinary surgeon;
- or
- f) Through the actual producer developing and implementing a programme with measures for preventative animal healthcare in consultation with a veterinary surgeon. This programme must include at least one annual visit by a veterinary surgeon to the farm.

Regardless of the alternative fulfilled, account must be taken of the following health parameters and if any of these deviates from the normal, a remedial plan must be drawn up in consultation with a veterinary surgeon or advisory officer.

- g) Mortality
- h) Claw health
- i) Incidence of coccidiosis
- j) Use of antibiotics or other pharmaceuticals
- k) Number of chickens per square meter

### Verification requirements

- Data must be available on annual mortality rate
- Any remedial plan required must be in place
- A production journal must be kept

## 10.3 Production efficiency

### 10.3.1 Documentation of feed conversion efficiency

Feed conversion efficiency, expressed as amount of feed per chicken supplied (liveweight) must be documented. If the feed conversion efficiency exceeds 1.8 kg feed/kg chicken when rearing to 35 days or 2.1 kg feed/kg chicken when rearing to greater than 35 days of age, the enterprise must draw up measures to improve the efficiency. These measures must be implemented within three years.

#### **Verification requirements**

- Feed conversion efficiency must be reported, together with data on duration of the rearing period.
- If the guideline value is exceeded, there must be a remedial plan containing measures that are carried out within three years.

## **10.4 Feeding**

*The aim of the regulations is to decrease the climate impact associated with feeding animals. How the feed is produced, choice of individual ingredients and efficient feed utilisation are important for climate gas emissions from production. Decreased soya use in the feed is desirable since soya production has a great climate impact. The permitted amount of soya at the present time is the lowest fraction allowed with the feedstuffs available on the market, but the aim is for the use of soya to decrease further over time when there are more feedstuffs with lower soya content available. Through careful calculation of the content of individual amino acids in the feed, nitrogen use efficiency can be improved. When feed is grown locally there are more opportunities to use the manure and transport is decreased.*

### **10.4.1 Monitoring feeding**

Analyses must be available of the nutrient content in terms of protein and metabolisable energy in all feeds used, even feeds produced on the farm. The feeding strategy must be reviewed annually. Waste of feed, general overfeeding and overfeeding with protein must be dealt with. In the review, the feed consumption rate must be compared in relation to the planned consumption in the diet. The review must also produce a calculation of the fraction of feed in the diet produced on-farm or in partnership with neighbouring arable farms. **(K)**

#### **Verification requirements**

- Analyses of home-grown cereal included in the diet must be available, with at least one analytical result per harvest
- Documentation on feed monitoring must be available in which the feed consumption rate is compared with the planned consumption and the percentage waste is estimated.
- Proposed measures must be specified to deal with any feed losses and overfeeding.

### **10.4.2 Climate impact of purchased feed**

It must be shown that account has been taken of the climate impact in the choice of purchased feed. When feed mixes are bought in, the feeds selected must be climate-calculated and have verified low emissions of climate gases. The calculation method must be reported openly. This does not apply to purchase of feeds from neighbouring farms, see opening section for definition of neighbouring farm. **(K)**

#### **Verification requirements**

- Documentation on purchased feed must be available to show that the feeds selected have low emissions compared with other feeds, or are purchased from a neighbouring farm.
- The method used for calculating the climate impact must be reported by the feed supplier.

#### **10.4.3 Purchased soya**

Inclusion of soya in the feed of production animals must be max 15% over the entire rearing period.

From 1 January 2013, the soya used must be sustainability certified according to an internationally accepted system, e.g. IFOAM, Proterra or RTRS. **(K)**

#### **Verification requirements**

- Declarations of contents and delivery notes for purchased feed must be available. For purchases from neighbours, the amount, type, delivery date and seller of the feed must be reported.

#### **10.4.4 Mineral fertiliser use in cultivation of purchased feed**

If the proportion of feed produced on the farm is less than half the total feed requirement, the following requirement must be fulfilled:

From 1 January 2013, at least 50% of purchased grain must be cultivated using mineral fertiliser that has not given rise to emissions of more than 3.6 kg CO<sub>2</sub>-equivalents per kg N, which must be demonstrated in an openly reported empirical model provided by the supplier.



## 11 FISH

*The aim of the regulations is to reduce the climate impact of fisheries for fish and shellfish products.*

### 11.1 Basic requirement

#### 11.1.1 Other regulations that must be fulfilled

In addition to the regulations in this chapter, you must comply with the regulations in Chapter 1 [General Regulation] and Chapter 12 [Transport].

### 11.2 Fishing

#### 11.2.1 Stocks

The stocks from which you fish must be certified in accordance with the MSC or KRAV's regulation for stock assessment, both of which are approved quality systems for the use of climate certification. It is possible for other systems to request testing in order to gain approval. These issues are dealt with by the climate certification system's steering group. You can find the contact details at [www.klimatmarkningen.se](http://www.klimatmarkningen.se). **(K)**

#### 11.2.2 Fuel demand for fishing

When fishing for human consumption, the fuel demand must be less than 0.5 litres of fuel per kilo of landed fish, i.e. cleaned, mixed catch including heads but excluding intestines. With regard to industrial fishing, fuel demand must be less than 0.07 litres per kilo of fish landed whole. Fuel demand must be calculated as an annual average value. **(K)**

#### Recommendation

- You should draw up an action plan for rationalising fuel consumption. The plan must include how in due course fossil fuels can be phased out and replaced by renewable fuels.

#### 11.2.3 Refrigerants onboard

You must not use synthetic refrigerants onboard.

## 12 TRANSPORT

*The aim of the regulations is to decrease the climate impact that arises from transport of food.*

### 12.1. Who is responsible for calculating the emissions from transport?

The party who labels a consumer package with a label that fulfils all the requirements in Climate Certification for Food is responsible for ensuring that the regulations in this section are complied with.

### 12.2. How calculations are to be carried out

The calculations must encompass the food chain from primary production farm gate to the supermarket or equivalent. However, side-flows such as transport of packaging material should not be included. The calculations must be documented and supported by scientific data. The standard values provided in the climate certification project report 'Climate impact of food transport - Decision support for climate certification' can be used. If other data are used, their accuracy must be approved by the certification body.

The calculations must be completed by 1 January 2013 at the latest.

### 12.3. Maximum climate impact from transport

The climate impact from transport of a product may not exceed 0.25 kg CO<sub>2</sub>-equivalents/kg food.

The climate impact from transport of fresh vegetables that can be grown regionally and stored overwinter may not exceed 0.10 kg CO<sub>2</sub>-equivalents/kg food. The verification requirements for these regulations provide examples of the vegetables in question.

### 12.4. Some exceptions for products with major potential for improvement

Products that do not fulfil 12.3, but where the climate impact from transport is less than 0.40 kg CO<sub>2</sub>-equivalents/kg food, can be certified according to these regulations if the climate impact from transport of the food is decreasing annually by at least 20% calculated as an average. The producer must produce a plan for decreasing the climate impact from transport according to the above.

### 12.5. Exceptions for transport from weak economies

For transport from countries and areas with low HDI (Human Development Index), exceptions to regulations 12.2-4 can be granted according to the following:

- a. For areas with HDI under 0.650, no limit applies for carbon dioxide emissions during transport to a country or a region that has HDI 0.75 or higher. For transport after the product has arrived in a region with HDI over 0.75, regulations 12.2-4 apply.
- b. For areas with HDI 0.651-0.749, the climate impact from transport to a region that has HDI above 0.75 may not exceed 1.0 kg CO<sub>2</sub>-equivalents /kg food. For transport after the product has arrived in a region with HDI over 0.75, transport in accordance with regulations 12.2-4 is also permissible.

## **12.6. Driver training**

The farm's drivers and contract drivers must have undergone training in resource efficient driving (ecodriving). This training must be updated at least every five years. This regulation does not apply for the transport covered by the exceptions in 12.5.

## 13 Food handling, processing and packaging

*These requirements apply for the handling, processing and packaging of products intended for climate certification. These requirements, together with the standards for transport, refer to that part of the food chain not covered by the requirements on primary production on the farm. By production unit is meant the company, factory or site where processing and packaging take place. The requirements apply to that part of the operations within the control of the company consumer-labelling a product.*

Until 31 December 2012, products can be consumer-labelled as climate certified even if the processing and/or packaging company has not been climate certified. From 1 January 2013 all the different types of standards that apply for a particular product must be certified in order for the product to be consumer-labelled as climate certified.

### 13.1 Knowledge of the climate impact

*The aim of the regulations is to raise the level of knowledge on how companies working within the areas of product development, processing and/or packaging of food can decrease the climate impact of their operations.*

Those working in product development, handling, processing and/or packaging of a product must have the knowledge to decrease the climate impact of the production in a life cycle perspective.

#### Verification requirements

The requirement is met if the company can produce one of the following documents for the production unit where packaging/processing takes place:

- Certificate from completion of a training course within the climate area with relevance for the company's operations, for key individuals within the company working on product development, handling, processing and/or packaging solutions.
- Analysis of the production unit's operations from a climate perspective, with suggestions for improvements.
- A product policy for the production unit dealing with climate aspects and involving continuous improvement
- Environmental management system for the production unit where climate issues are identified and included in improvement work.

### 13.2 Packaging

*The aim of the regulations is to decrease the climate impact of food packaging without compromising product quality or shelf-life. Important parameters include minimising the amount of packaging material without impairing its function and choosing and designing packaging in terms of function, transport efficiency, recycling and minimisation of losses.*

#### 13.2.1 Choice of packaging solution

Within two years of entry into the certification system, those consumer-packaging goods will have to be able to justify their choice of packaging solution from a climate perspective.

#### **Verification requirements**

- Documents justifying the choice of packaging solution from a climate perspective, dated. Analysis of the climate impact of the packaging system must include the aspects transport efficiency, packaging material, function, waste products/source separation and losses. The analysis can be based on data from the climate certification project (<http://www.klimatmarkningen.se/wp-content/uploads/2009/12/2009-1-forpackningar.pdf>). If LCA for the packaging solutions in question are available, these must be presented in the analysis.
- The analysis must be updated every three years.

#### **13.2.2 Sustainable forest materials**

The forest raw materials used in packaging must be sustainability certified, e.g. through FSC-labelling or equivalent.

#### **Verification requirements**

Certificate showing that the forest raw materials are sustainability certified.

### **13.3 Increasing energy efficiency**

*The aim of the regulations is to increase energy use efficiency in processing and packaging of goods, during operations and in investments.*

The company must analyse and increase the efficiency of energy use in its operations during production of the food/product. In current analyses and before new investments, the energy efficiency, measured in terms of energy use per unit finished product, must be considered.

#### **Verification requirements**

- A dated analysis of direct energy use per unit finished product, based on annual volume of production and annual energy use by the production unit, divided into different types of energy, e.g. electricity, diesel, heating oil, wood chips/biofuel and other fuels and propellants. In addition, a distinction must be made between renewable and non-renewable energy types. It must be possible to support the analysis by invoices from purchases or equivalent. The analysis must be revised every three years and show continuous improvements in energy efficiency.
- There must be a dated plan for how the efficiency of energy use per production volume can be increased. The plan shows improvements that must be reported within three years and the plan must be updated every three years.
- For new investment or re-investment in equipment, or new building or renovation, the choice of system must be documented and there must be evidence of the consideration given to the question of increasing the energy efficiency.
- Exceptions can be made to the requirement if comprehensive energy measures were introduced before entry into the certification system or if external factors have arisen and have been impossible to control.

### **13.4 Use of renewable fuels**

*The aim of the regulations is to decrease the proportion of non-renewable fuels used in processing and packaging of goods.*

The company must have a plan for decreasing the reliance on non-renewable fuels per unit produced. This plan must show the measures carried out within a three-year period from entry into the certification system.

#### **Verification requirements**

- The existence of a plan with documentation showing decreased use of non-renewable fuels per unit finished product, dated.

### **13.5 Renewable electricity**

*The aim of the regulations is to decrease the climate impact through the company using electricity from renewable energy sources.*

The electricity used by the company must consist of electricity that is 100% from renewable energy sources, for example environmentally labelled electricity or equivalent. This applies on entering into a new contract for electricity supply, but at the latest within three years from entry into the certification system. **(K)**

#### **Verification requirements**

- Contract documentation, dates.

### **13.6 Climate certified ingredients in composite products**

*The aim of the regulations is to guarantee the proportion of climate certified raw materials in foods that are composed of many different raw materials.*

A product that is composed of a number of raw materials may be marketed as climate certified if it contains more than 90% by weight of climate certified raw materials. The list of ingredients must clearly show which ingredients are climate certified. Salt and water must not be included in calculations of the climate certified fraction in the product. Animal products and characterising raw materials must always be climate certified.

#### **Verification requirements**

Documentation showing the list of ingredients and the proportion of climate certified raw materials in a processed product.

### **13.7. Food waste**

*The aim of the regulations is to decrease the climate impact of food from the food chain through decreasing losses and waste in packaging and processing. Losses occur in all parts of the food chain, e.g. in rejection of faulty packages, logistics problems or quality problems. Some losses are unavoidable and will always arise as a direct result of food handling.*

*Examples of such losses are peel, bone, skin. Losses can also generate waste products which can be recycled for use in the food chain.*

The company must record the amount of losses per unit finished product and work to decrease losses and utilise waste products as resources in the food chain.

**Verification requirements**

- Analysis, dated. This analysis must include data on the amount of losses and waste products arising in the operation and an investigation of possible ways to decrease losses and utilise waste products. The analysis must be updated every three years.
- Reporting of measures to decrease losses.