

## FOUR SCENARIOS FOR THE FUTURE OF AGRICULTURE

### SCENARIO 1: Green Growth

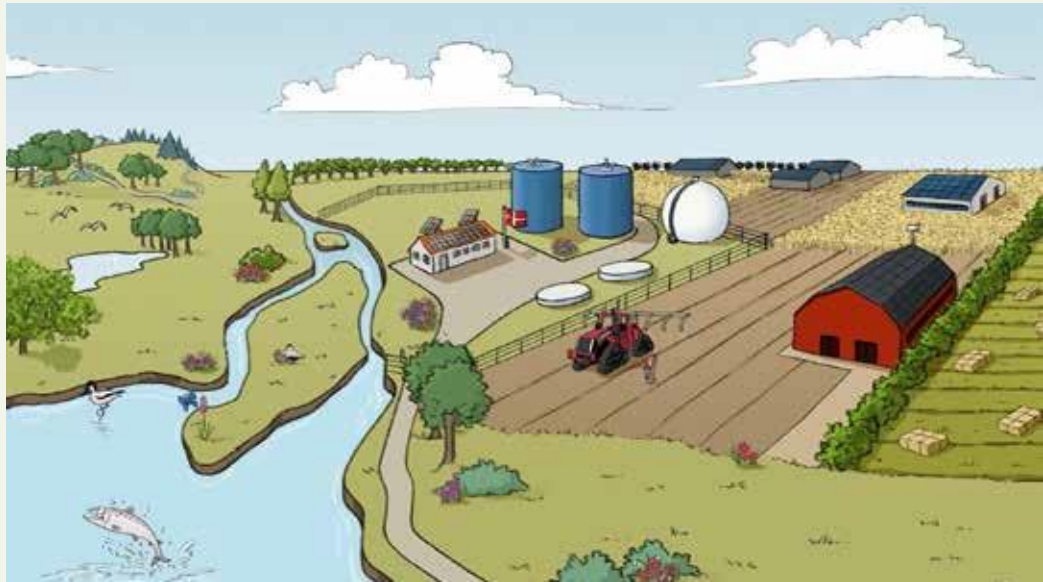
In the 'Green Growth' scenario mainly aims to minimize the pollution and climate impact due to farming while maintaining and improving potentials for growth in agriculture.

The sub-objectives are:

- Effective handling of nutrients from agriculture
- Reduced emission of greenhouse gases
- Reduced use of pesticides

The Danish agriculture sector is progressing with high productivity, but also with room for nature. Forests, scrub, meadows, grazing and wetlands have been placed in the most vulnerable areas to protect wildlife. In turn, livestock are rarely seen on fields. Most of them live in closed barns year round to fully control the emission of ammonia and greenhouse gases.

Land tillage is eco-friendly, and many farms are organic. Farmers only spray when



necessary and always with precise high-tech equipment. Grass seed are sown in many grain fields, and when crops have been harvested, a green field remains, absorbing excess nutrients to avoid leaching to the aquatic environment.

Both straw and grass crops are used in biogas plants that also process slurry, which contributes to a sustainable energy supply.

### SCENARIO 2: Urban and Rural

In the Urban and Rural scenario, the main aim is to connect the urban and the rural to impel progress in rural districts and farms with increased employment and healthy economies. The sub-objectives are:

- Increased local food production, processing and sale
- Promoting organic methods to protect the environment and climate
- Increased focus on suburban needs such as food, nature and recreation

In areas near cities, the urban and rural are fused together. New forests have been planted, and cattle and sheep graze on meadows and grazing land. The areas are teaming with farm shops, micro-dairies, breweries and locally produced specialties like cheeses and hams, and trade between urban and rural areas is lively. Farms and hinterland surrounding the cities attract



tourists and school children seeking adventure, learning and recreation. People from the city purchase many goods from farmers markets and though food cooperatives.

In the country, farther from cities,

more than half of farms are organic. Along streams and lakes, cultivation is extra cautious in order to protect the aquatic environment. The food sector lives by selling organic quality products at home and abroad. >>>

## SCENARIO 3:

### The Biobased Society

In 'The Biobased Society' scenario, the main objective is to have farmers supply feedstock to the production of renewable energy and materials in addition to the food supply.

The sub-objectives are:

- High production of energy crops and raw materials for the industrial sector
- Effective high-tech utilization of biomass
- Maximizing the recirculation of nutrients

There are five big biorefineries in Denmark: three in Jutland, one on Funen and one on Zealand. They produce bioenergy, chemicals, plastic and other important raw materials. The refineries are state of the art and apply the newest biotechnology to convert straw, grass, wood chips, slurry and other biomass from agriculture into useful products. Denmark has achieved independence from fossil fuels and bioenergy is an important part



of the energy supply.

The biorefineries in the hinterland grow willow, poplar and grass for the plants and they also use straw from grain fields. Large, intensive production plants with pigs and cows are spread

across the landscape, and in addition to meat and dairy produce, they also produce slurry for the refineries. Nothing is wasted at the refineries: Fertilizer is returned to the fields and a fraction of it even converted to valuable fodder for the cattle.

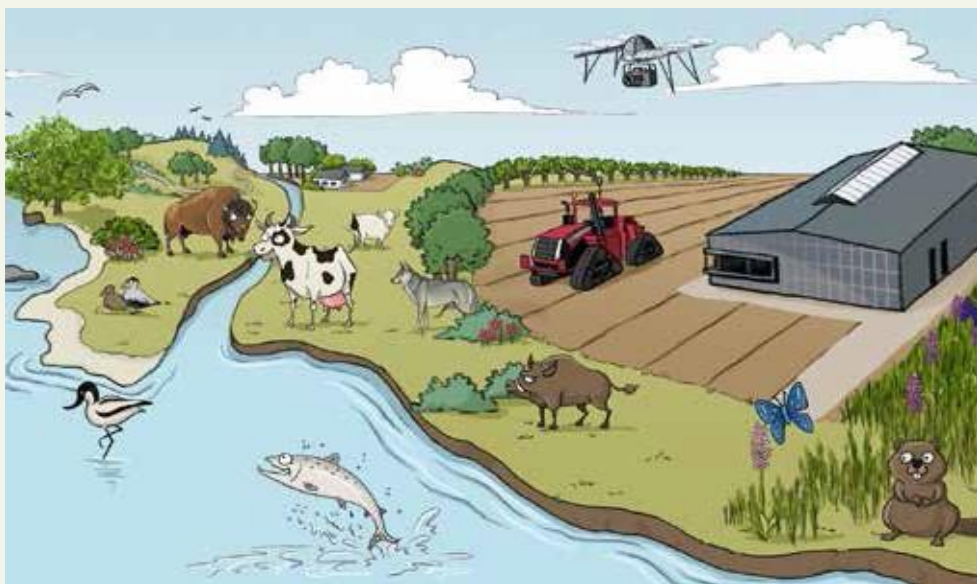
## SCENARIO 4: A Rich Nature

In the scenario of 'A Rich Nature', the main aim is to create more biological diversity and balance in nature in 2050.

The sub-objectives are:

- Increasing biodiversity in the open land
- Increasing open nature areas
- Creating coherence and diversity in nature

The Danish landscape is characterized by diverse nature, rich in species. The wetland is teeming with birdlife, and there a plenty of fish of different sorts in lakes and streams. Cows and sheep graze in meadows and open grazing land alternating between forest and scrub. Nature gains coherence with new green corridors in which animals and plants can move and spread such as in river valleys. Untouched areas of nature reserve stretch far in between. The largest ones have been named national parks. Wolf, wild boar, beaver and the European bison can be found. Butterflies and orchids that used to be rare thrive in the open landscape.



Intensive agricultural production fills up an area smaller than today. Modern machines and advanced technology ensure high yields per hectare, and intensive production of pigs, poultry

and dairy cows takes place in high-tech facilities. The production is effective and the environmental impact is under control.

### New applications for agricultural land

In all scenarios, the land use of many fields will be changed. Up to 25 percent of the cultivation soil will be restructured into forests, grass or energy crops as

Denmark is currently one of the world's most intensely cultivated countries. Almost 2/3 of the area is farmland. In the last 100 years, we have reclaimed more and more land by draining wet lands, lakes and inlets.

A number of the lands are bad at retaining nutrients and have only little agricultural value.