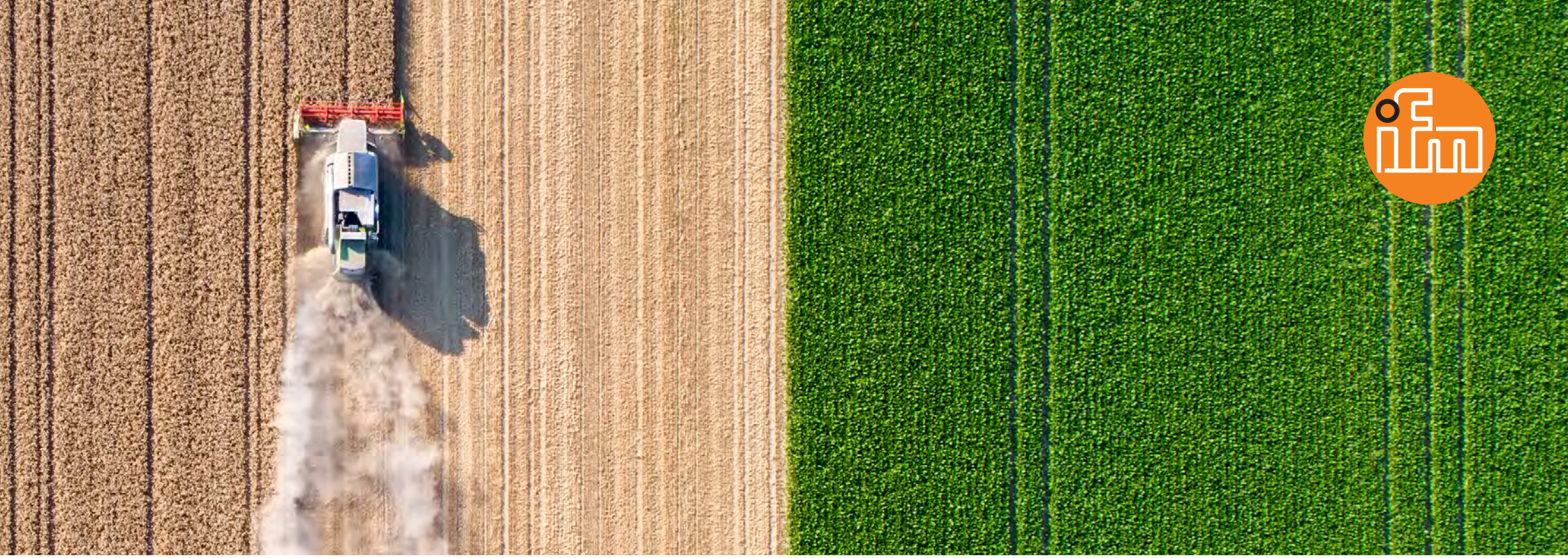
Future of food production

Towards sustainable nutrition of the world's population



Future of food production

By Simon Evans

Towards sustainable nutrition of the world's population

Feeding the ever-growing world population is one of the great challenges of our time. Together with climate change and the related question of new types of energy supply, these challenges require a joint effort by all those involved – from politics to research, from the various social groups to the companies in the food industry and their suppliers. The ifm group of companies is committed to its responsibility and will pay increased attention to the provision of suitable technologies. We want to make a contribution to ensuring that sufficient food can be provided for every human being worldwide in the future.

The resources on our planet are limited: Drinking water and agricultural land – the essential foundations for food production – cannot simply be recreated. Even though hunger is part of everyday life for large parts of the world's population, our agricultural and livestock sectors are at least theoretically capable of feeding the entire world population. Hunger often has political causes, and of course the resources mentioned above are not evenly distributed. Typical examples are famines due to droughts in the Sahel or in extremely densely populated developing countries. In addition, there are armed conflicts that cause people to flee, so that they are unable to provide themselves with food.

The resources on our planet are limited

10 billion
Projected world population 2050

Population growth

With the current world population of almost eight billion people, sufficient nutrition is theoretically possible with the methods used today and the resources available. However, this population size will not remain constant. The United Nations assume that by 2050 almost ten billion people will live on earth. A change in food production is therefore urgently needed. Besides, there are other reasons why the current methods of food production will have to change. One problem, for example, is the high demand for land, particularly from the high proportion of animal products in the overall diet of the world's population. The clearing of rainforest for agriculture and livestock farming is an absolutely indefensible solution against the background of the other great challenge of our time – climate change. Besides, the consumption of water and energy for livestock farming is extremely high.

How will everyone be fed?

If we do not fundamentally change our eating habits and food production processes, not everyone will be fed in the future.

The combination of population growth and resource scarcity leads to only one logical conclusion: If we do not fundamentally change our eating habits and food production processes, not everyone will be fed in the future. In order to solve these problems and enable sustainable nutrition of the world's population, there are different approaches in a wide range of areas. In addition to the shift away from animal-based to plant-based foods, these are primarily efficiency improvements in existing processes and the development of new methods. Increases in efficiency – i.e. the production of the same amount of food with less resource consumption – are possible in traditional agriculture and livestock farming, for example. Precision farming or digitisation of agriculture are two of the buzzwords here. Ultimately, this is about a very precise use of the resources deployed in order to increase the yield per area, for example. Modern sensor technology is used for this purpose, which can optimise the processes by means of corresponding control technology. In principle, this is very similar to the various methods of digitisation in the manufacturing industry which are summarised under the term Industry 4.0.

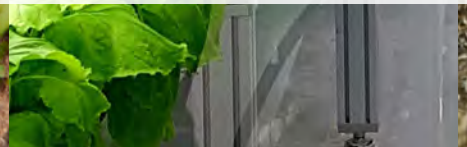
Outdoor farming

Indoor farming

Livestock farming

Aquaculture

Alternative proteins



"We want to make a contribution to ensuring that sufficient food can be provided for every person worldwide in the future."

Simon Evans,
Managing Director Global Food & Agriculture
ifm Group of Companies

In addition to optimisations of existing processes, there are also innovative approaches in the production of food. One promising idea, for example, is so-called vertical farming. Agricultural products are grown in vertically arranged multi-storey greenhouses. The main advantages of vertical farming are the small amount of land required and the possibility to automate production as much as possible. Moreover, such vertical greenhouses can be ideally integrated into an urban environment. A similar idea, parts of which are already being implemented on a large scale, is aquaculture. Marine animals or algae are bred in artificially constructed facilities. Many of the environmentally harmful effects of traditional fishing are thus avoided. Another approach that is becoming more and more widespread is the use of alternative proteins. Plant-based burgers, sausages etc. can already be found on most supermarket shelves today. In the future, products made from insects could be added to this. Numerous new methods in this field are currently being developed.

Innovative approaches to food production.

ifm's contribution

Sensor technology, automation technology and extensive digitisation are prerequisites for all the methods described above. These are the strengths and core competences with which the ifm group of companies has been successful in the past decades. We are therefore firmly convinced that the systems and technologies we offer can contribute to making future food production more sustainable and efficient. In the future, we will strengthen our activities to help our customers and partners in the various industries involved in food manufacturing to develop innovative solutions. Together with everyone involved, we can ensure that everyone is fed despite the growing world population.

Sensor technology, automation technology and extensive digitisation are prerequisites

LITERATURE

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