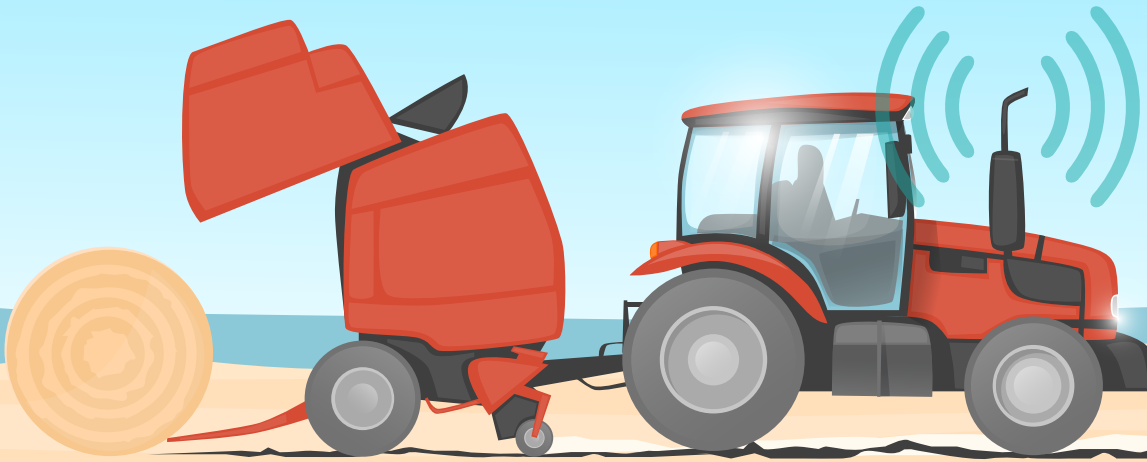


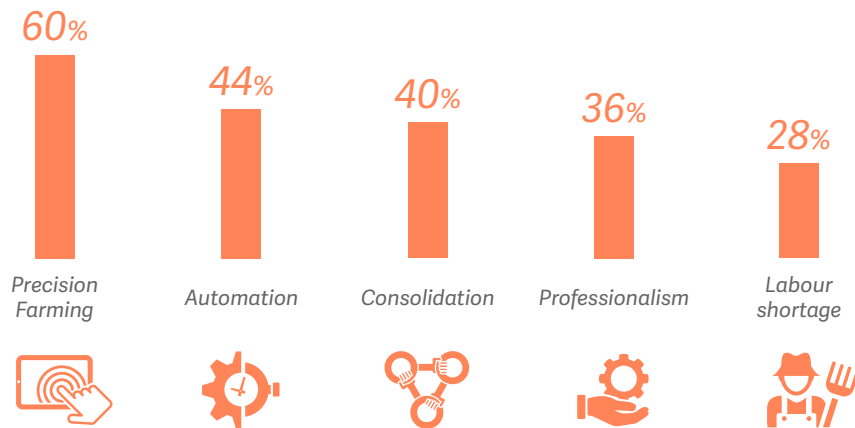
# FARMING 4.0: THE FUTURE OF AGRICULTURE?

Rising demand for bigger yields and higher environmental protection has put pressure on the agricultural sector to “produce more with less”. Smart farming or “farming 4.0.” could hold the key.

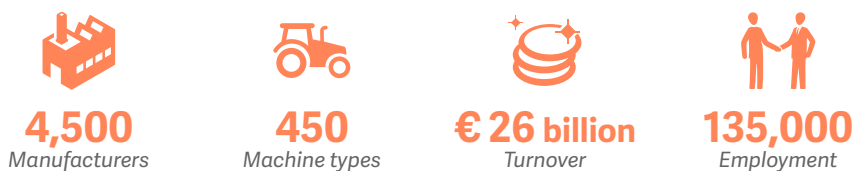
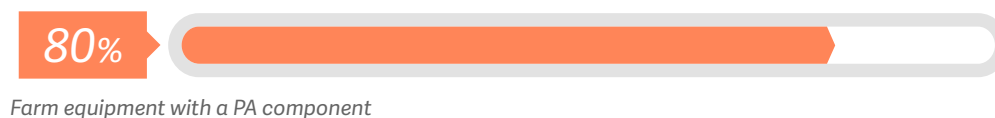


In Europe, Precision Agriculture (PA) and the integration of digital technology are set to become the most influential trends in the sector, as a growing number of farmers start to adopt digital technologies to run their businesses.

## Most influential trends affecting farming practices and structures through 2030

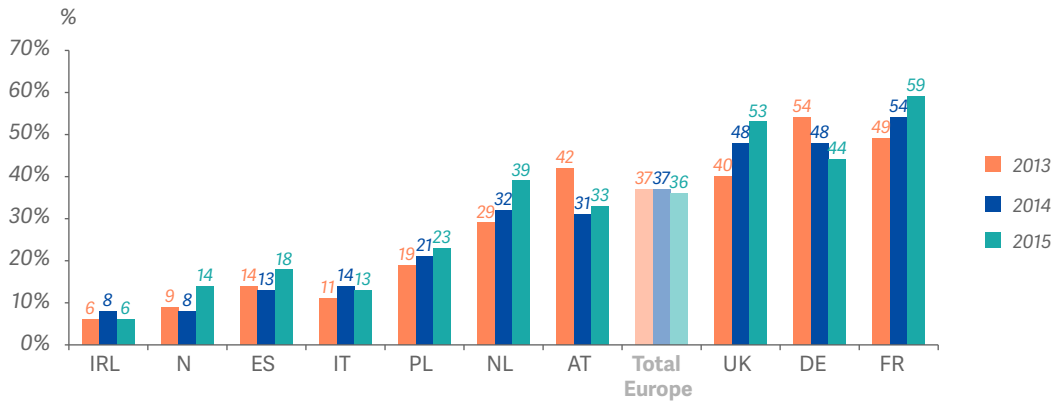


According to the machinery industry in Europe, 70 to 80% of new farm equipment sold now has some form of PA component technology inside. There are 4,500 manufacturers, producing 450 different machine types with an annual turnover of €26 billion. The sector also employs 135,000 people.



However, the uptake of Precision Farming in Europe is still very low. For instance, only 35% of new fertiliser spreaders are sold with a precision weighing instrument included, essential for adjusting quantity and direction of spread.

### Centrifugal Fertilizer Spreaders in EU, 2013-2015

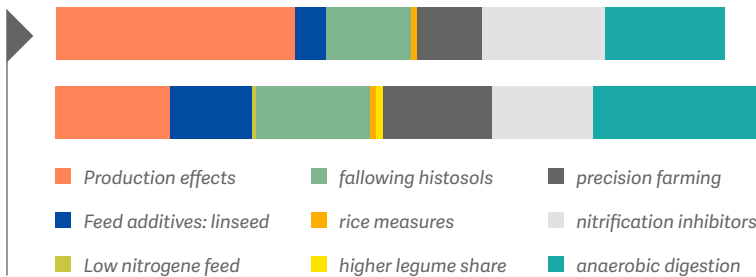


Precision Farming can potentially help farmers produce higher yields, less crop damage and fewer inputs such as water, fuel and fertiliser. The European Joint Research Center estimates that PA can make a huge CO<sub>2</sub> saving contribution in European agriculture until 2030.

### Contribution of each technological mitigation option to total Greenhouse Gas emissions mitigation in the EU-28 (2030), according to each EcAMPA 2 scenario

#### SCENARIO HET15

- Compulsory 15% mitigation target for EU-28 agriculture, allocated to Member States (MS) according to cost-effectiveness
- No subsidy for the application of mitigation technologies
- 'Restricted' potential of the mitigation technologies

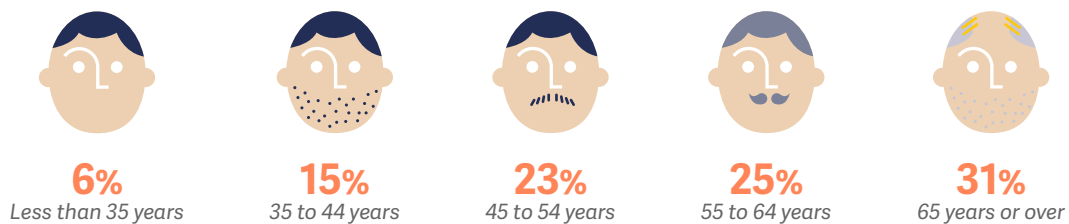


#### SCENARIO SUB80V-15

- Compulsory 15% mitigation target for EU-28 agriculture, allocated to MS according to cost-effectiveness
- 80% subsidy for the voluntary application of all mitigation technologies
- 'Restricted' potential of the mitigation technologies

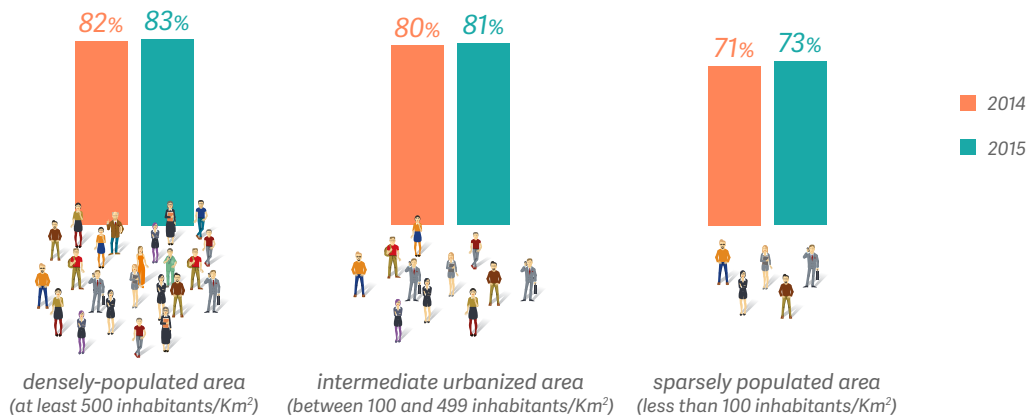
These technologies are still expensive to most farmers, especially for the smaller ones. Europe is also facing an ageing workforce on farms, and the introduction of new technologies could result in a "two-speed" EU agriculture.

### Distribution of holding managers by age groups in the EU, 2013



In many EU rural areas, Internet access is limited and this holds back the use of big data.

### Percentage of households with broadband internet connection



The EU is pushing for a digital revolution within the agricultural sector by supporting specific schemes and offering financial incentives to farms.



Common Agricultural Policy (2014-2020)  
Fund for Rural Development (Pillar II):  
**99 586 million** of euros.



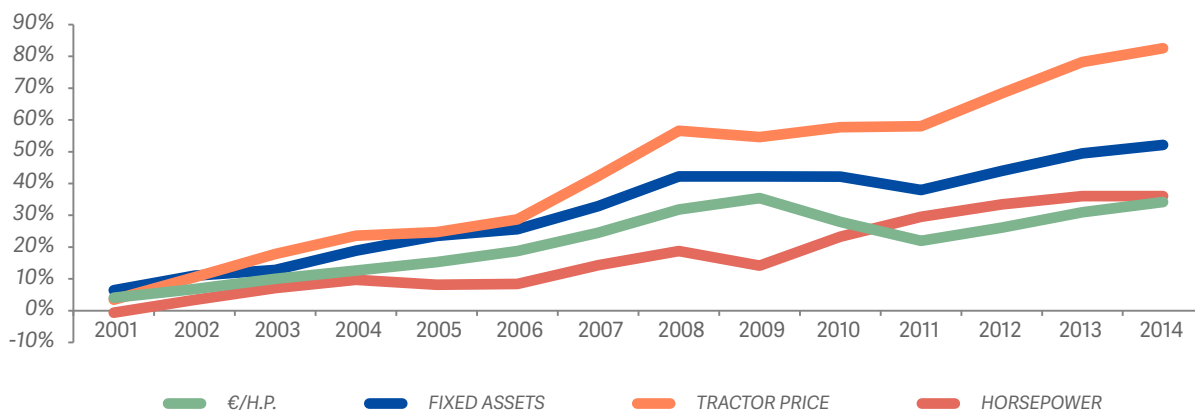
Horizon 2020 Work Programme 2016-2017:  
**64 million** dedicated to precision farming in the agriculture sector.  
**30 million** for implementation of an Internet of Things Large Scale Pilot on "Smart farming and food security".



The Commission is working closely with the European Investment Bank to develop financial instruments for farmers, like a guarantee scheme.

But industry believes that costly compliance with EU legislation will hamper future innovation. According to industry, nearly one third of the price increase of a tractor in the last 15 years can be attributed to comply with new EU legislation.

Regulatory cost & price increase for tractors in Spain



Sources: ANSEMAT, CEMA, Eurostat, Boston Consulting Group, EcAMPA 2 report - Joint Research Center, Spanish Ministry of Agriculture

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