

WE HAVE FOUR: PICK ONE

The natural system is strictly bonded to production processes through a series of two-way relations. The productive system, nonetheless, strongly depends on climate, soil and natural resources for its well-being. Earth's current rise in CO₂ levels, and

consequently in temperature, is having a harsh effect on its croplands and pastures. Predictions about future climate change scenarios point out substantial differences in production levels from those we are used to. While moderate warming may be beneficial to crop and pasture yields in mid-to-high regions, it will have an adverse effect in low-latitude regions which will immediately face a drop in production. Still, if global warming will continue its actual rush, every region will be strongly affected in its produc-

tion capabilities, and SRES' 4 scenarios define at which exact point in time a sudden drop in production is due, described as the "critical point". Apart from temperature, farming and forestry production is also severely influenced by the increased frequency and hashness of extreme climate events, as proven by the unexpected drought that Europe faced in 2003. Food trade is foreseen to increase in response to climate change, with increased reliance of low latitude countries on food import. These four scenarios are modeled after

different socio-economic models. Every model's trend is defined by different environmental and productive socio-political choices.

PROJECT BY

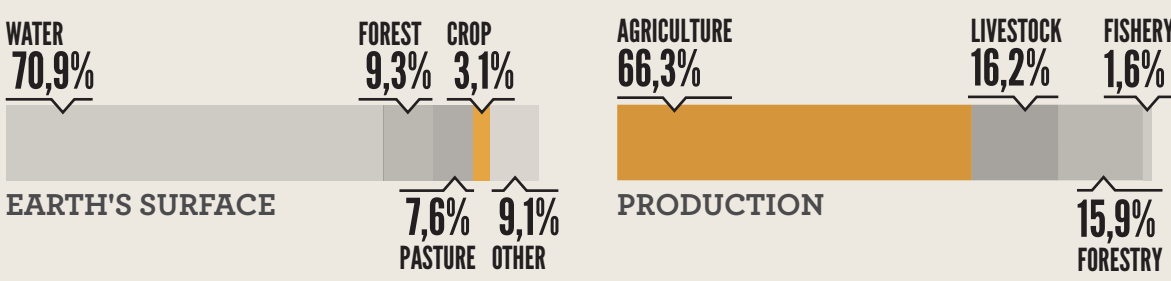
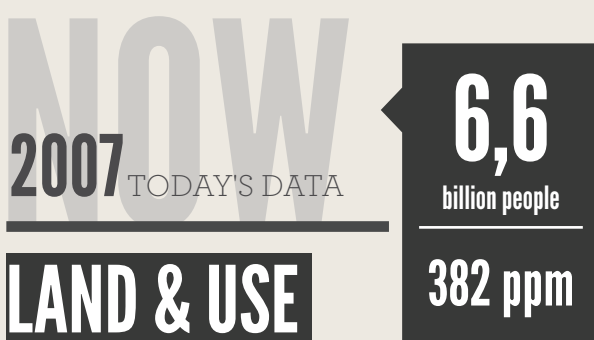
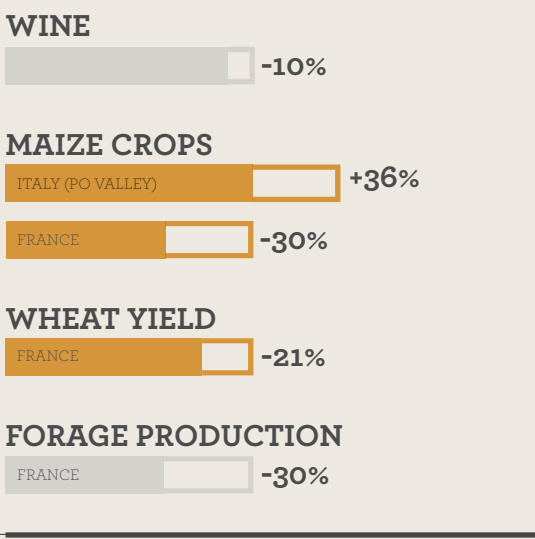
Lorenzo Aprigliano
Achille Viggo Calegari
Guido Chieffalo
Alex Piacentini
Giacomo Traldi
Laura Varisco

SYSTEM DIAGRAM

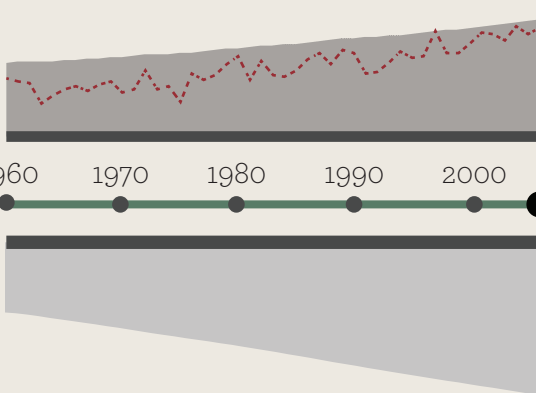


EXTREME EVENTS EUROPEAN DROUGHT 2003

CAUSES & EFFECTS
MEDIUM TEMPERATURE: +6° C
PRECIPITATIONS: -300 mm
ECONOMIC DAMAGE: € 13 billion
DAMAGE IN FRANCE: € 4 billion



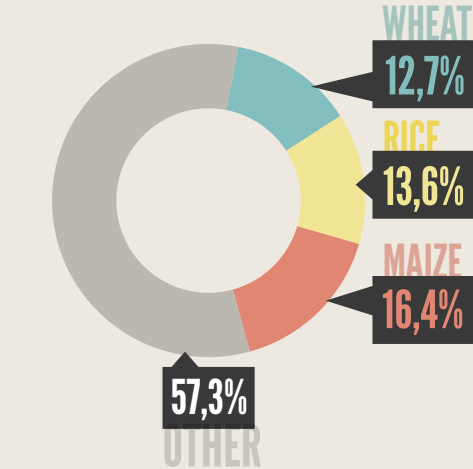
PAST 1960-2007 TEMPERATURE, CO2 POPULATION



..... temperature variation referred to year 2007 (°C)
— CO₂ rise (ppm)
— population growth (billions)

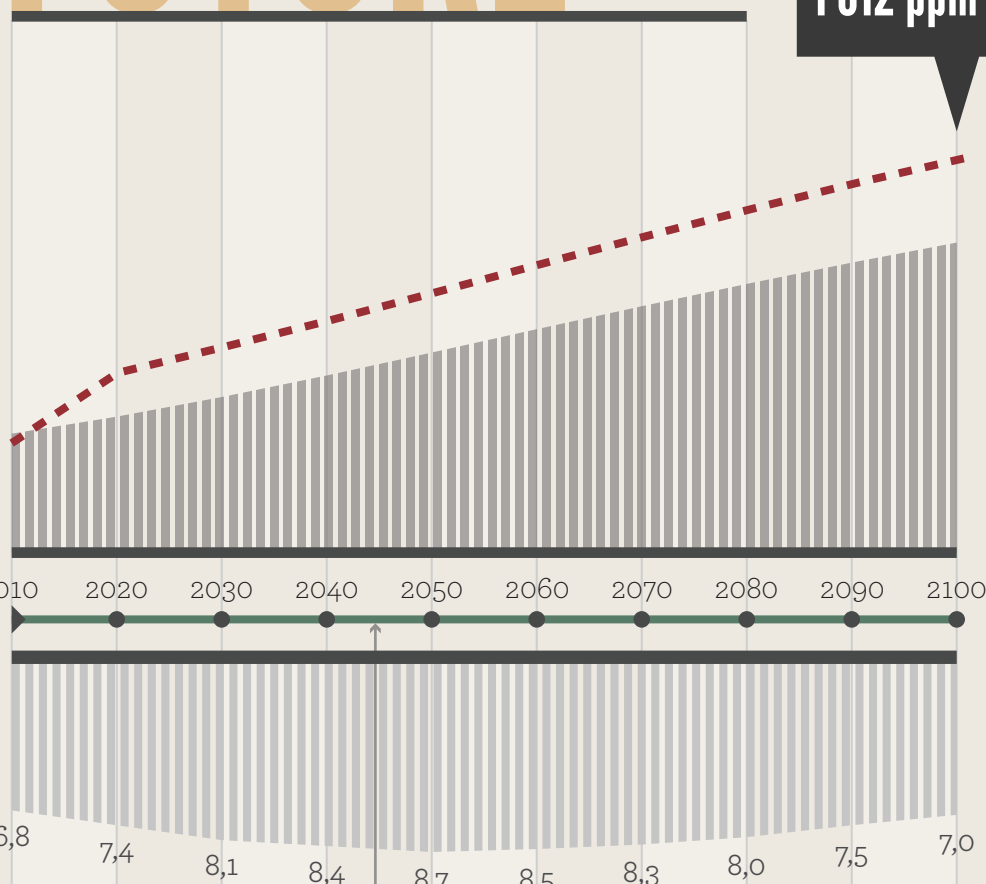
PROJECTIONS RICE, WHEAT & MAIZE 2010-2100

Climate change and temperature increases are likely to have negative yield impacts for major cereal crops. The three areas show the gap between wheat, rice and maize production in high and low latitude regions.



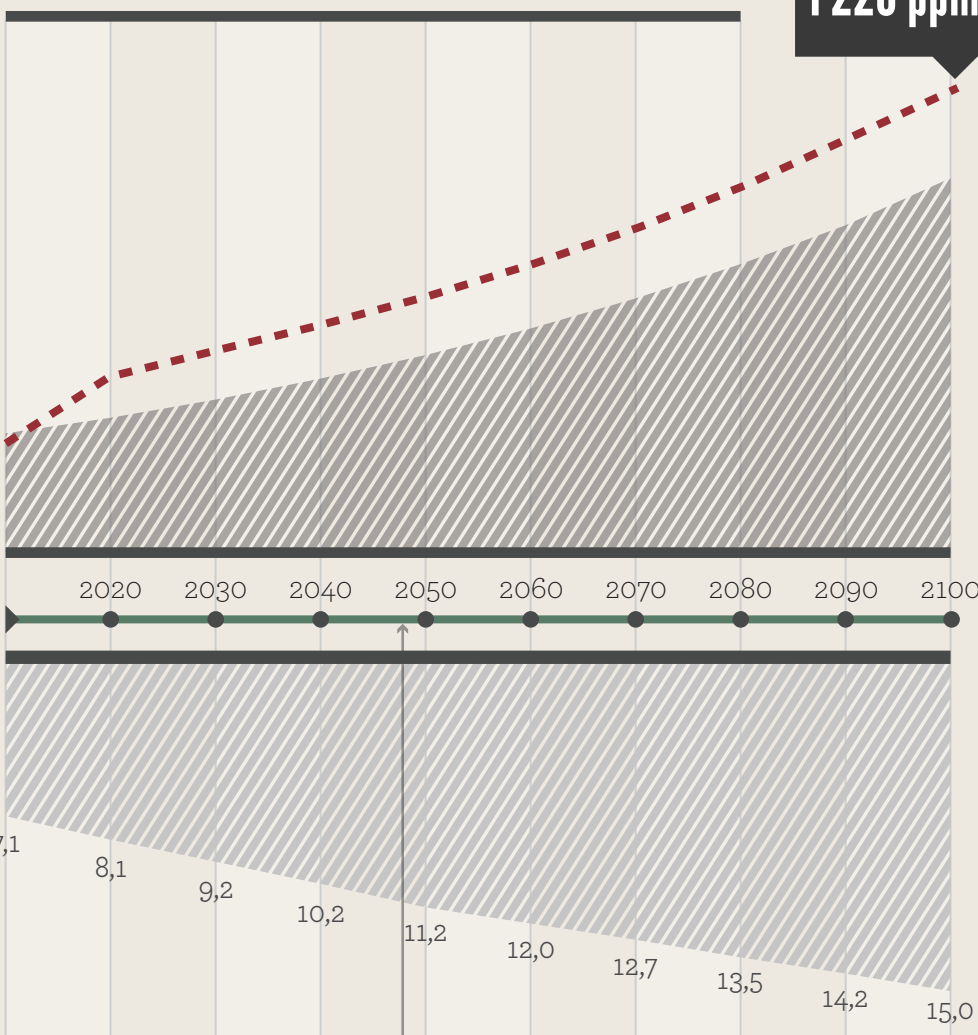
A1 ECONOMIC & GLOBAL ORIENTED

+7.6°
1'012 ppm



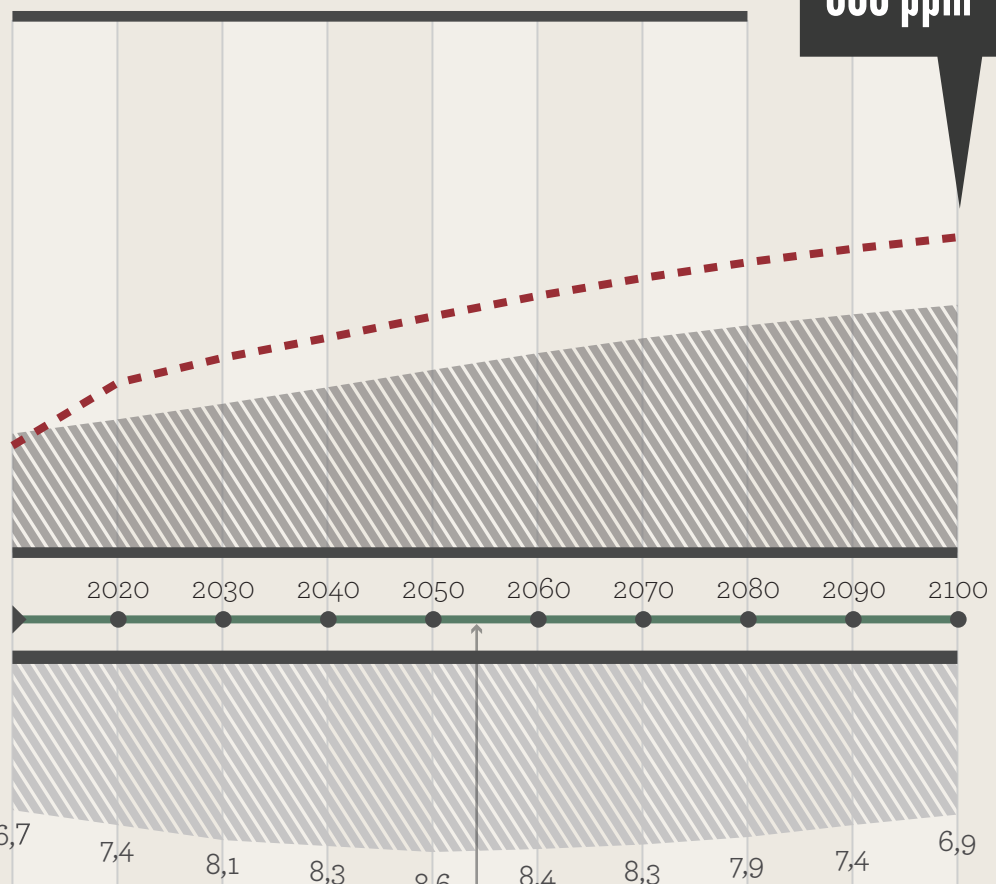
A2 ECONOMIC & REGIONAL ORIENTED

+9.5°
1'220 ppm



B1 ENVIRONMENTAL & GLOBAL ORIENTED

+5.6°
808 ppm



B2 ENVIRONMENTAL & REGIONAL ORIENTED

+7.1°
963 ppm

