

**A FARMERS PERSPECTIVE ON AGRICULTURE AND
BIOTECHNOLOGY IN PORTUGAL AND EUROPE ECHNOLOGY IN
PROTUGAL AND EUROPE**

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European farmers in general and Portuguese farmers in particular are facing increasing problems controlling pests and weeds. Additionally, several molecules of pesticides have been withdrawn from the market as they are not allowed in Europe anymore. Portugal has an additional problem by controlling an enormous rate of erosion every year and has identified regions where nitrogen applications have by law to be reduced. Moreover, having a Mediterranean climate the country faces cyclically severe droughts. 2012 was the worst of the last 70 years. Several Portuguese farmers, as farmers in other parts of the World, have chosen Conservation Agriculture (CA) practices as no-till and minimum-till to be able to avoid these devastating processes. As many people know, these highly favorable to the environment techniques lead however to increasingly problems to control mainly weeds. In the USA and South America farmers under CA could continue due to GMO's and the surface with these technologies does not stop to increase. In Portugal the surface tend to decrease. Though, the main intention with the presentation will be to prove how important GMO's can be to solve farmer's difficulties and European requirements.

A farmer's perspective on agriculture and biotechnology in Portugal and Europe.



Gabriela Cruz

Farmer in Portugal

Durban, SA

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My farming background

- I am the third of four sisters
- We represent the 4th generation of farmers
- I am an agronomist
- I have been managing the family farm for the last 23 years
- Under No-Till/Minimum Tillage since 1998
- Under IPM from 2000
- Main Crops: maize, wheat, barley, peas
- Beef Cattle



ELVAS

ESPANHA

MADRID

PORTUGAL

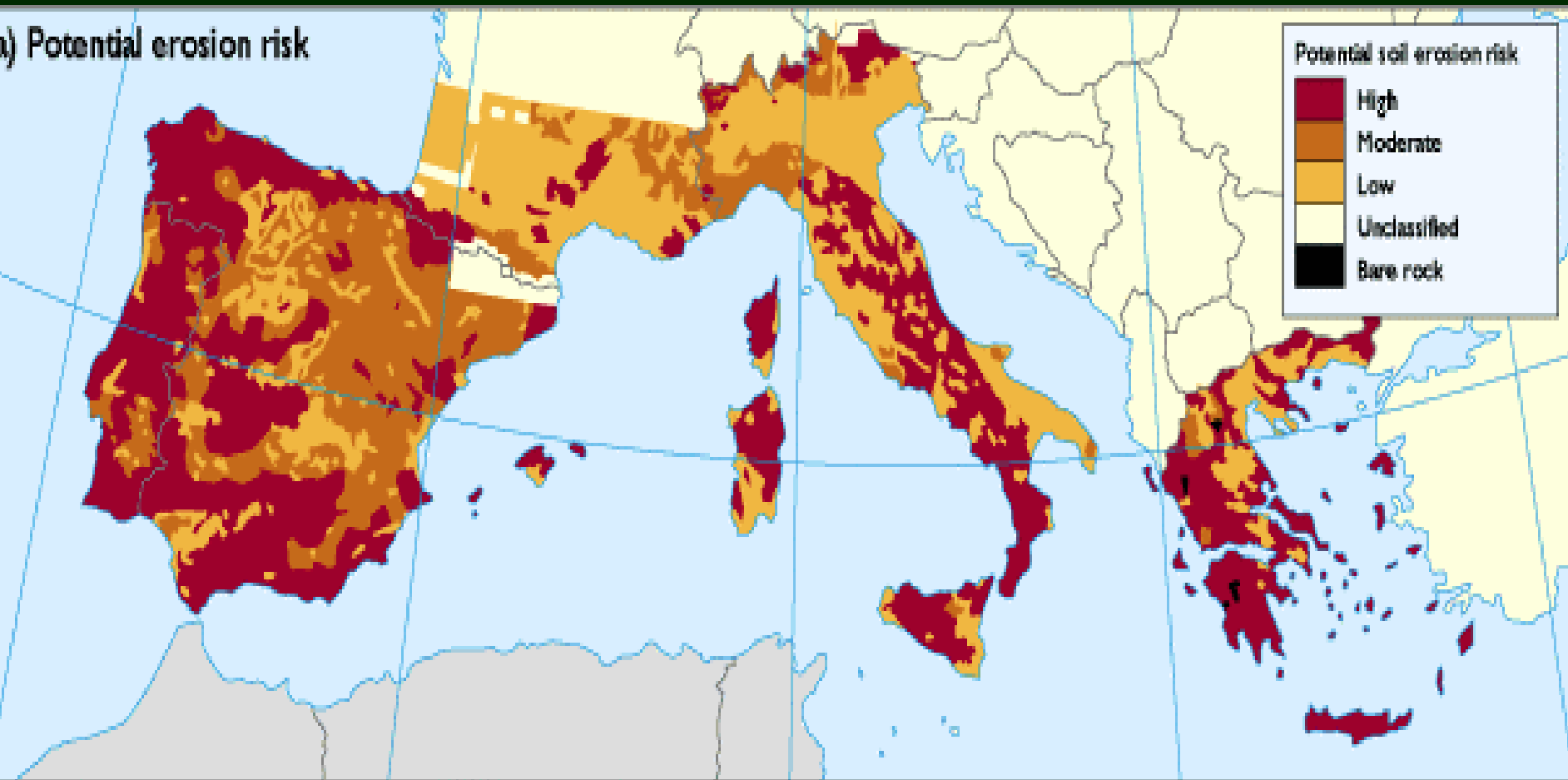
LISBOA

OCEANO
ATLANTICO

What does Europe expect of me as a farmer?

To practice sustainable farming
i.e., Produce safe food, feed, services
while protecting natural resources
and remaining profitable

Potential Risk of Erosion in Southern Europe



Corine Project

EEA (1992)

Erosion on a conventional tillage maize field



My Top 8 goals as a farmer

1. Control Erosion & Increase soil fertility
2. Resist pests & diseases
3. Control weeds
4. Reduce the use of pesticides (32 % a.i less in Europe)
5. Reduce water & energy consumption
6. Reduce nitrogen contamination of water (Vulnerable Zones)
7. Maintain biodiversity
8. Be profitable – Stay in Business

What Tools did I chose?

- ❖ Few Conventional Crops→Agrochemicals↓
- ❖ 1 Biotech. Crop (Bt maize),
- ❖ No -Till / Minimum Tillage,
- ❖ IPM Integrated Production Management

No-Till Maize





What could I Achieve?

- ↓ Agrochemicals: 750 lts total/year
- ↓ Fuel: 70 lts/ha/yr=7.000lts total *
- ↓ Water Consumption -15%/year *
- ↓ CO2 emissions - 20 tons total *
- ↓ Erosion*
- ↑ Soil fertility(o.m) – 5%/year → Carbon sink*
- ↑ Contribution to mitigate climate change
- ↑ 10% Increase on yields
- ↑ Better quality – grain & Silage

* could carry on with CA

What could I not achieve?

- A even higher reduction in insecticide due to other pest pressure



What else could I not achieve?

- Almost no reduction on herbicides -difficult weed control when in Conservation Agriculture (CA)

Abutilon theophrasti



Echinochloa crus-galli



Rumex spp



What else could I not achieve?

- Even Higher reduction in water and energy (electrical) consumption





What do I need to pursue my goals?

- Genetics - Biotechnology
- Research in IPM
- Research in No-Till/Minimum Till for other crops
- Alternative crops to introduce in the rotation - Available Biotech crops



Future 3 Capes of Good Hope:

- Freedom of choice for every farmer to decide which tools & type of farming to use in his pursuit for better life;
- EU Institutions decisions based on science;
- Public researchers and companies carry on bringing new biotech crops.

**Eisenhower said: “Farming is very easy
when the plough is a pencil and corn fields
are many miles away”**



Thank you very much