



EUSiD Finland

# GMOs: Socioeconomic Considerations

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# GMOS

Socio-economic implications



**BENEFITS**



**DRAWBACKS**

**GOOD  
or  
BAD?**















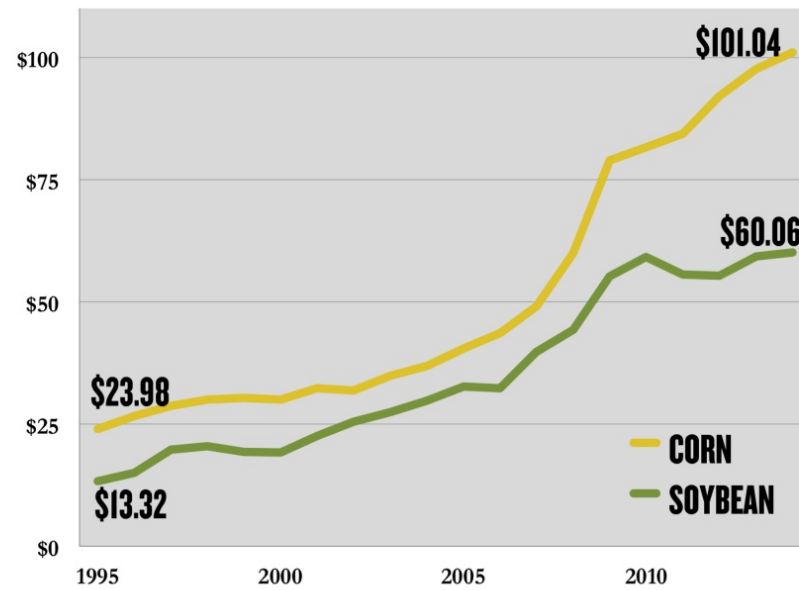




- **Dependency** on producers of GMO seeds;
- **Field Contamination** ;
- **Ineffectiveness** of GMO's.

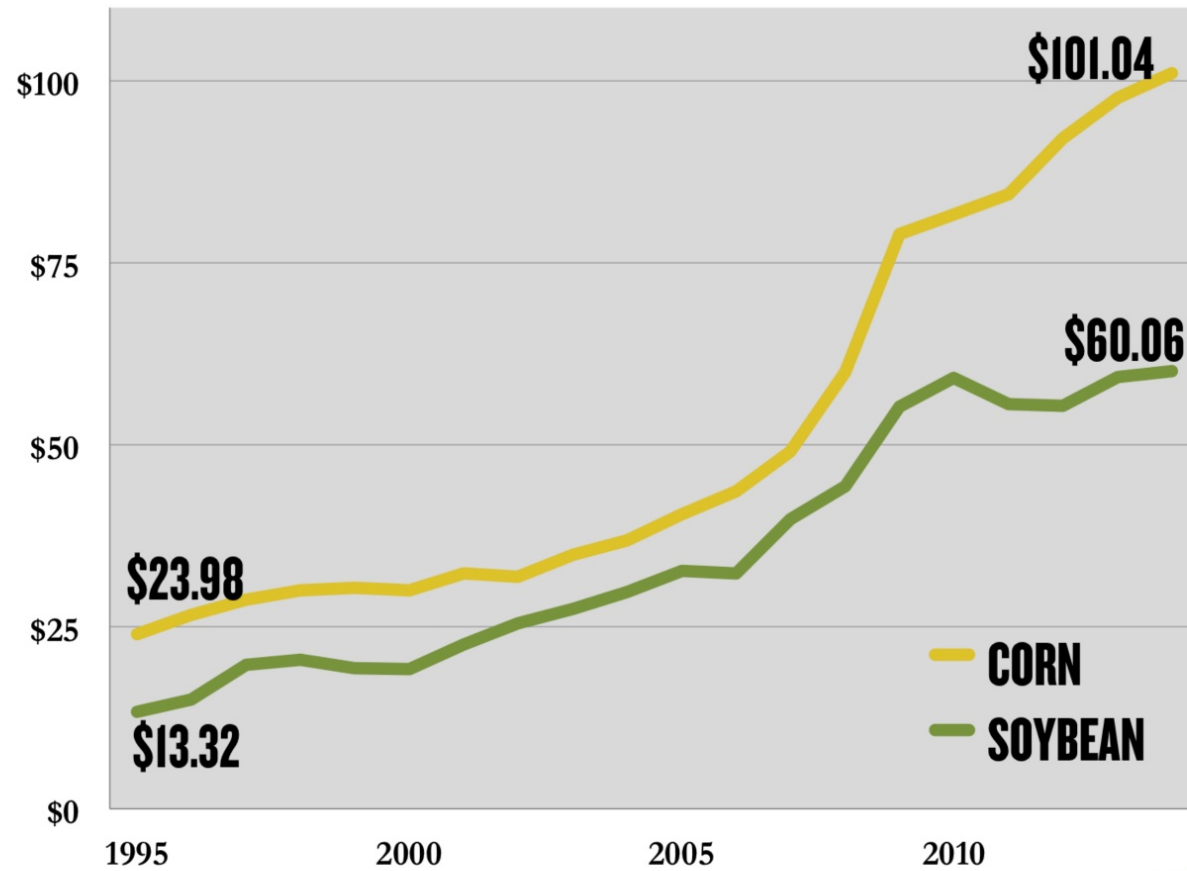
# Dependency of farmers

## 20-YEAR SPIKE in SEED COSTS





## 20-YEAR SPIKE in SEED COSTS



# Contamination

## 1 Seed purity

The 100 points of vulnerability during seed production make seed purity critical.



## 2 Sowing Machinery

GM seeds commingling in the seed drill can lead to contamination during sowing. A thorough cleaning is imperative.

## 3 Field contamination

Wind- or insect-borne cross pollination can contaminate the field. Isolation distances and buffer zones are key to overcoming this.



## 4 Harvesting Equipment

Sharing of machinery during harvest increases the possibilities of contamination.

## 5 Transportation

Risk of contamination increases with number of operators in the supply chain.



## 6 Storage

Elevators are one of the main sources of unintended impurities in supply chains. In the US, segregation costs were projected to be up to \$10/t for commodities like corn and soy. (FoEE, 2009)

## 7 Mills

Switching from GMO to non-GMO milling requires a full facility cleaning followed by a 2 hour flushing. Even then, however, as much as 1% of GMO contamination can be detected.



## 8 Food & feed processors

Cross-contaminations at this stage occur frequently. GM avoidance requires additional staff training and a reliable and efficient raw material analysis.

## Field contamination

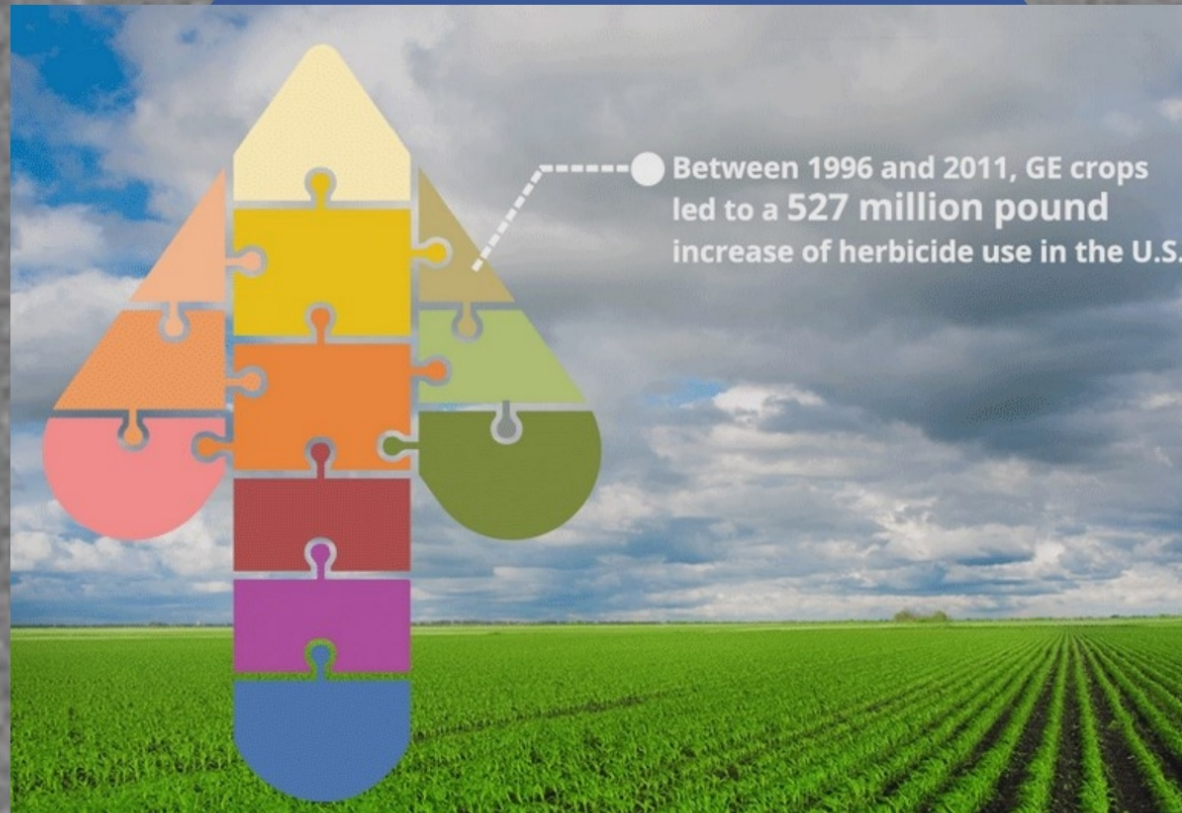
Wind- or insect-borne cross pollination can contaminate the field. Isolation distances and buffer zones are key to overcoming this.

# 3





# Ineffectiveness



- **Between 1996 and 2011, GE crops led to a 527 million pound increase of herbicide use in the U.S.**





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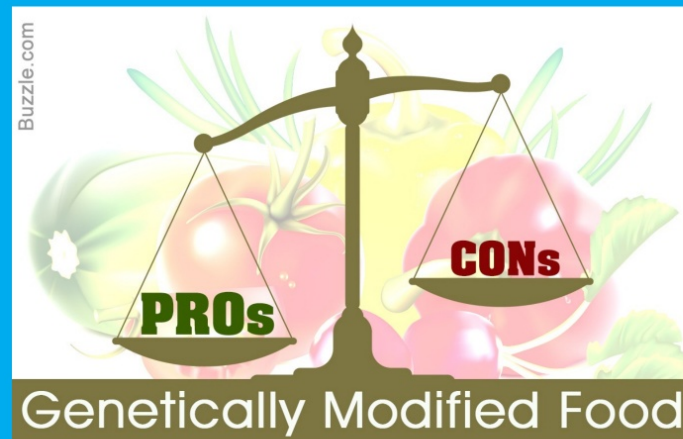
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CONCLUSION

GAME  
TIME



# Socio-economic benefits



**INSIGHT**



**Socio-economic benefits** refer to benefits offered to a community as a whole through the use of GM crops, and can include long-term impacts on the prevailing **economic conditions**, on levels of **education**, on the **family unit** or on **employment** levels.

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# PROS







- 
- **Less land for more food**
  - **Increase in food supply**
  - **Larger profit for farmers**
  - **Nutritional value of food**
  - **Protection of crops in developing countries**
  - **Positive environmental impact**
  - **Improvement of durability of vegetables**



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## Less land for more food

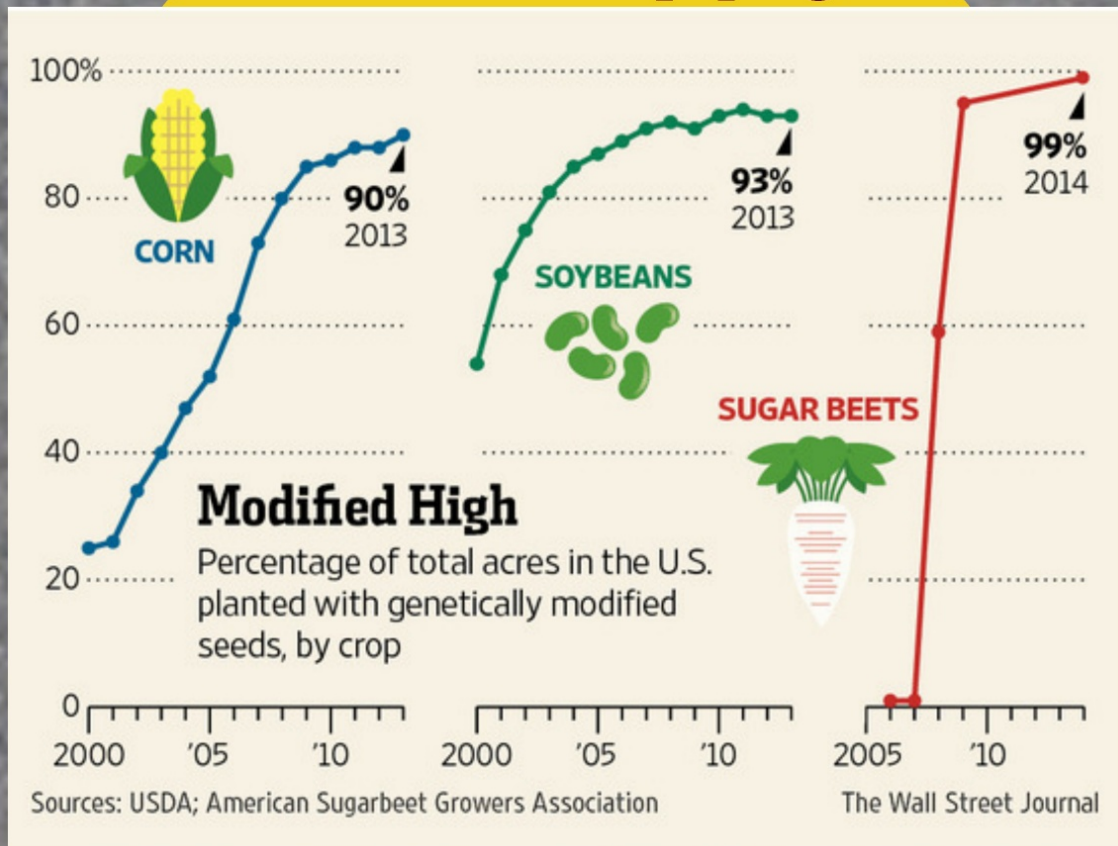


↓ **LESS**  
LAND NEEDED

In 2015, without GMOs, **48 million more acres would have been needed to be planted** to grow the same amount of food.<sup>5</sup>



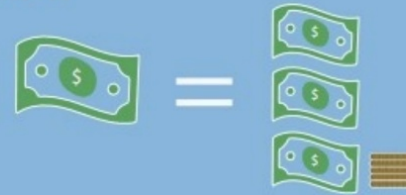
# Food supply



# MORE profit for farmers

**GM CROPS OFFER EXCELLENT RETURN  
ON INVESTMENT ESPECIALLY FOR FARMERS  
IN DEVELOPING COUNTRIES.**

IN 2014,  
FARMERS IN DEVELOPING  
COUNTRIES RECEIVED \$4.42  
FOR EACH DOLLAR INVESTED  
IN GM CROP SEEDS, WHICH IS  
A 342% RETURN ON INVESTMENT.



**Nutritional value**  
of food

**ZERO**

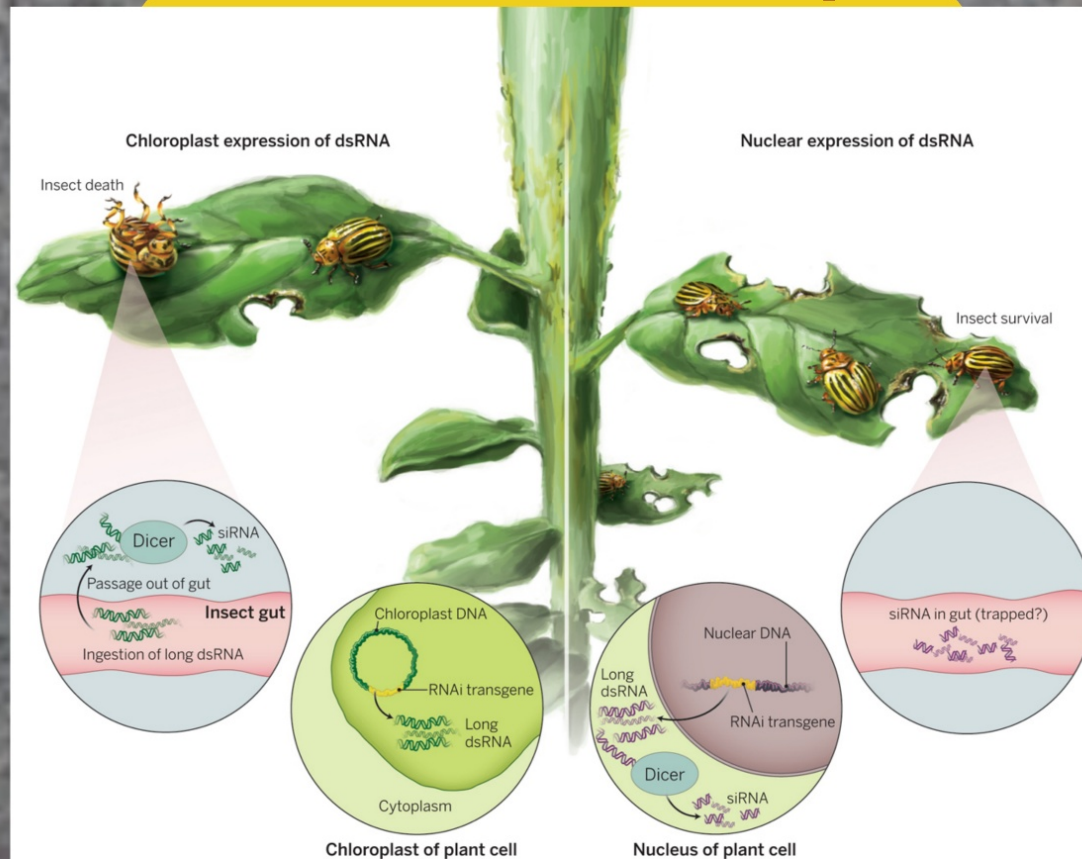
illnesses (human or animal) proven as  
a result of consuming GM food



# ZERO

illnesses (human or animal) proven as  
a result of consuming GM food

# Protection of crops



## Positive **environmental** impact



**?MYTH:**

GMOs are **bad** for the environment.

VS.

 **FACT:**

GM crops allow farmers to **use less resources** like water, energy, land & pesticides **while producing more.**



VS.



**FACT:**

GM crops allow farmers to  
**use less resources** like  
water, energy, land & pesticides  
**while producing more.**

# Durability of vegetables

**GM POTATOES  
ARE LESS PRONE  
TO BRUISING  
AND BLACK  
SPOTS**, meaning  
fewer potatoes  
will end up  
in landfills.







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# Life without GMOs?



Many don't realize what we'd be missing...



**Yields**



**Greenhouse Gas Emissions**



**Land Needs**



**Food Prices**







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A background image showing two people from a high angle, lying on their backs on a grey asphalt surface. They are holding onto a thick white rope that runs vertically. The person on the left is wearing a red shirt and blue pants, while the person on the right is wearing a pink shirt. A large black and white circular graphic is overlaid on the center of the image.

**Let's play a  
game!**

**First, form teams  
of **five** and  
wait for  
instructions.**

RULES

RULES

RULES

RULES

RULES

RULES





**1**

**Form a  
circle  
with 1 person in  
the centre**



2

The person in the  
**centre**  
will be blindfolded



**3**

**The person in the  
**centre**  
will choose someone  
to answer a question  
by pointing at this  
person**



**4**

**If that person gives the  
**WRONG** answer,  
he/she will be excluded,  
and the one in the centre  
will choose someone  
else.**

**5**

**IF that person gives the  
RIGHT answer,  
he/she will go into the  
centre and be  
blindfolded...**



**6**

**The survivors  
will win a prize!**



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