

Classe 4CL
a.s. 2014/2015

EXPO Project

Feeding the Planet
Energy for Life

A CHALLENGE NOT A SLOGAN

OUR EXPECTATIONS

We think *Expo Project* will play a fundamental role for the future of food.

We are sure this international contest will pave the way for a global change in people's eating habits and will lead to think of and enjoy

FOOD as *HEALTH*, food as *GLOBALISATION*,
food as love and happiness, food as culture,

FOOD as enjoyable *CHANGE* to make people live happily and longer.



HOW TO FEED THE PLANET

- **Food as change:**

There are seven billion people in the world, nearly one billion are undernourished or starving.

The amount of animal products that the rich world uses is not enough to feed them all.

People need a new food policy :

Change should come from society, which means from everyone.

The need to change for health reasons (lose weight and restore one's health) leads to use **veganism** and reduce the amount of meat and dairy products.

A new policy implies that people should set new cultural rules and eating habits.



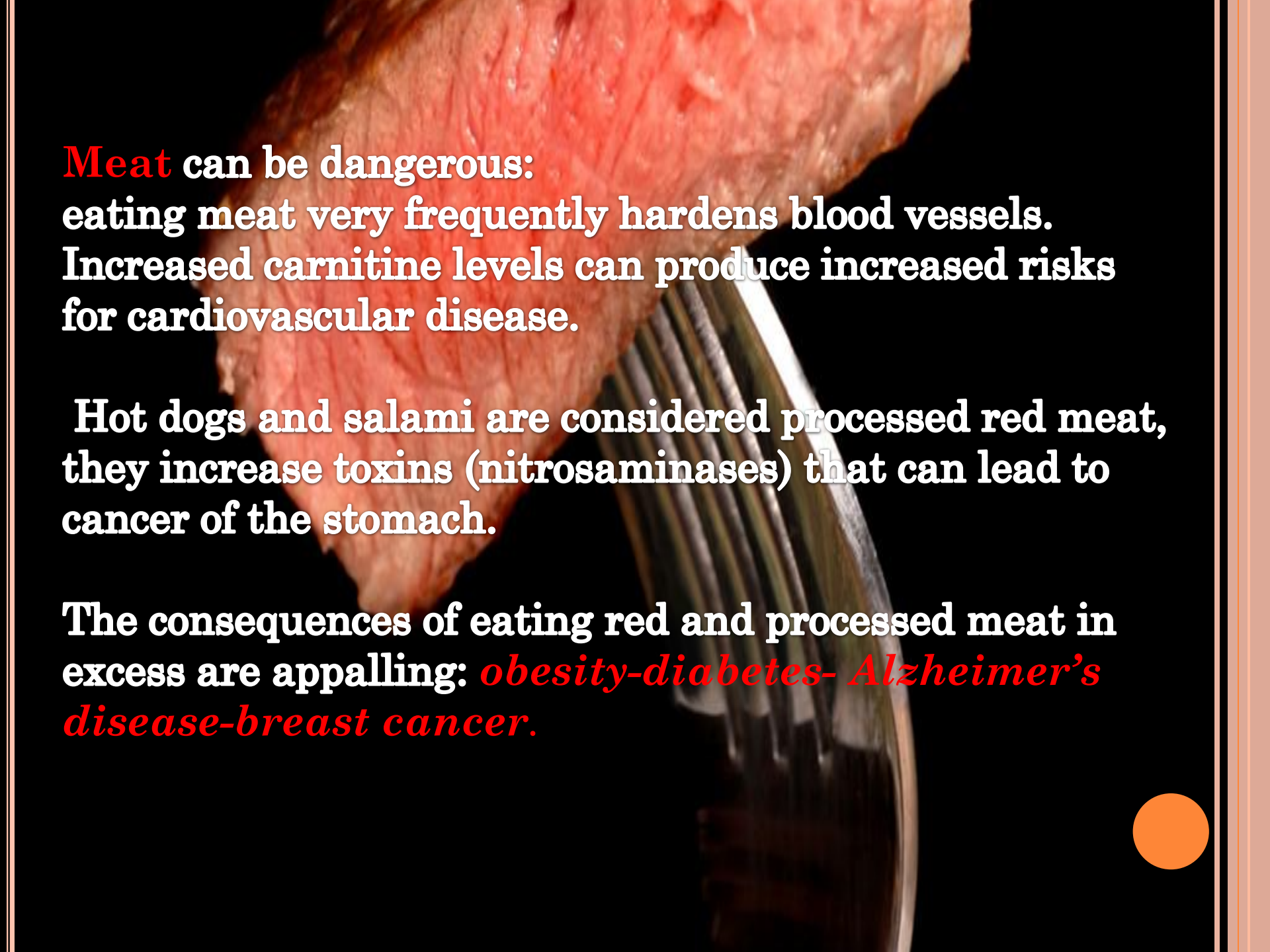
○ Food as GLOBALISATION and (BIO)- Diversity

The message is clear: **greener options**

We should waste less and look for **greener options**, being vegetarian or vegan can be an attainable goal, a plant-based diet and raising animals humanly and sustainably can make people happier, healthier and live longer.

Meat could become a luxury item, the price of meat will be rising in the future, the population will be growing and half of them will be asking for inexpensive food, besides, a lot of environmental problems will increase because of meat production.





Meat can be dangerous:
eating meat very frequently hardens blood vessels.
Increased carnitine levels can produce increased risks
for cardiovascular disease.

Hot dogs and salami are considered processed red meat,
they increase toxins (nitrosamines) that can lead to
cancer of the stomach.

The consequences of eating red and processed meat in
excess are appalling: *obesity-diabetes- Alzheimer's
disease-breast cancer.*



DIETS TO BE AVOIDED

- **Diets** rich in animal products contribute to the increased risk of obesity as well as diabetes.
- **Meat** contains a whole lot of iron which can raise levels of iron in the brain when eaten in excess , it may increase the risk of developing Alzheimer's disease.

Signs of Alzheimer's appear when iron accumulates in the brain and myelin, a fatty tissue that coats nerve fibers, is destroyed.

- Eating red meat and processed meats very frequently increases the risk of colorectal cancer in people with a genetic predisposition. Hormones added to red meat boost breast cancer and women who eat a lot of red meat per day can double the risk of developing hormone- sensitive breast cancer.



GREENER OPTIONS AND ORGANIC FOOD

- Producing large amounts of meat is dangerous for the environment as well.

Our world is a gigantic farm people live on, this farm is broken up by cities, forests, oceans.

30% of the land (ice-free surface), is used not to raise grains, fruits and vegetables but to support the chickens, pigs, cattle that we eventually eat.

40% of the land is used for raising livestock (which includes meat, milk, eggs), it contributes 40% of global agricultural gross domestic product and provides income for more than 1,3 billion people.

Factory farming is deeply criticized :

- it is cruel, dangerous to public health through the overuse of antibiotics and the pollution it causes to air and water.

- **Food production: efficiency is the key-word .**


- **Meat** production needs a change in the future, so does meat consumption.

Livestock are responsible for a high percentage of human-caused greenhouse gases (over 18%).

- The greenhouse effect is responsible for climate change, if gas emissions are reduced, the world will benefit as the negative effects of climate change will be tackled.

An organization called ICF, International Climate Fund is supporting farmers to deploy low carbon agriculture and to protect forests.

ICF is supporting investment in renewable energy in Africa, in low-income countries, it is helping developing countries to draw up their own low-carbon development plans.



GREENPEACE ACTIVISTS

Greenpeace activists have always protested at the destruction of the Amazon rainforest due to greedy soy producers who were selling their produce to chicken farms.

Rainforests in central America are destroyed in order to create grazing pastures for cattle to be sent back to the USA where they are transformed into meat, burgers, pet food.

The ecological catastrophe is enormous :

Tribal peoples in the rainforests are forced to set off their territories.

ENVIRONMENTALISTS' CRITICISM

Environmentalists claim that when you order a burger for lunch you indirectly put into the air a certain amount of greenhouse gas.

1. Eating meat and dairy products is expensive, it doesn't simply imply the carbon emissions, it is also the pesticides, fertilizers, fuel, water needed to produce the food.

We all face the health consequences from eating too much meat particularly **red meat.**

2. People can take in protein differently, all the nutrients they can get from animal products, they can get from plant-based products which are healthier.



FOOD AS CHANGE TO FEED THE PLANET: ALTERNATIVE SOURCES

Alternative sources can be:

ALGAE (seaweed) can feed human beings and animals it can be grown fast in the ocean.

Algae farming could become a cropping industry, in Asia there are huge farms.

Scientists say that seaweed granules can replace salt in bread, ready meals, sausages and cheese.

Seaweed can be eaten raw in salads, dried or stir-fried and used as a seasoning.

Seaweed salad is full of vitamins and minerals, it can accompany fish dishes.

INSECTS: a lot of species of insects are edible, they could replace meat as they are a source of protein.

Insects like crickets, grasshoppers, caterpillars can be used in burgers or sausages, they are eaten in some countries as part of a regular diet, crickets are eaten in Thailand, wasps in Japan and locusts in Africa. They contain protein and iron.



An aerial photograph of a valley with terraced fields and a river. The fields are green and brown, and the river is a light brown color. The background shows dark, forested hills.

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ORGANIC FARMING

Alice Granfo

ORGANIC FARMING

- It is a form of agriculture that relies on such techniques as crop manure, compost, and biological pest control.



NATURAL FERTILIZERS AND PESTICIDES

- Organic farming uses fertilizers and pesticides (which include herbicides, insecticides and fungicides) which are natural
- (such as pyrethrin from flowers).
- It strictly limits the use of various methods including synthetic petrochemical fertilizers and pesticides, plant growth regulators (such as hormones), antibiotic use in livestock, genetically modified organisms, human sewage sludge.
- Organic farming means:
sustainability, openness, independence, health, and safety.




ORGANIC FARMING

BENEFITS & LIMITS

- Organic farmers do not use chemical compounds to combat pests or weeds, they use multi-annual crop rotations, they use organic processors.
Organic ingredients are finding favour with leading chefs because they are produced in a natural way.
Organic farming offers consumers different varieties of vegetables, fruit, meat.

Limits:

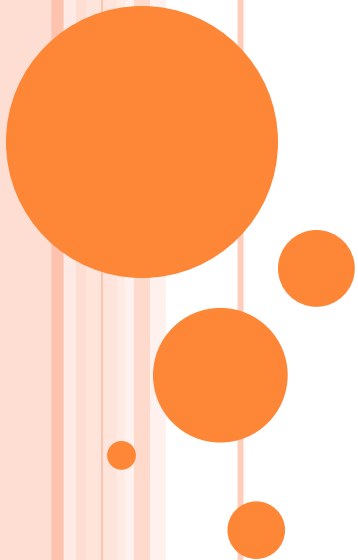
- Organic products are processed and distributed on a smaller scale, they take longer to produce and they cost more than other food.
Organic farming is less productive than conventional farming.
- 

ORGANIC FARMING

Francesca Giacometti



**FEEDING THE
PLANET**



THE BOOM

Organic food trend
became very
important in **2000**.

Now it is a
mainstream
lifestyle for some,
which translates
into
big business.



Organic farming is based on holistic, ecologically balanced agricultural principles:

- **soil fertility**
- **crop rotation**
- **natural pest control**

Allow nature
to do what nature
does best



ORGANIC PRODUCTS

What does “*organic*” mean?

It means being closer to the natural state

Farmers do not use synthetic pesticides or fertilizers, synthetic hormones, antibiotics or other medications.

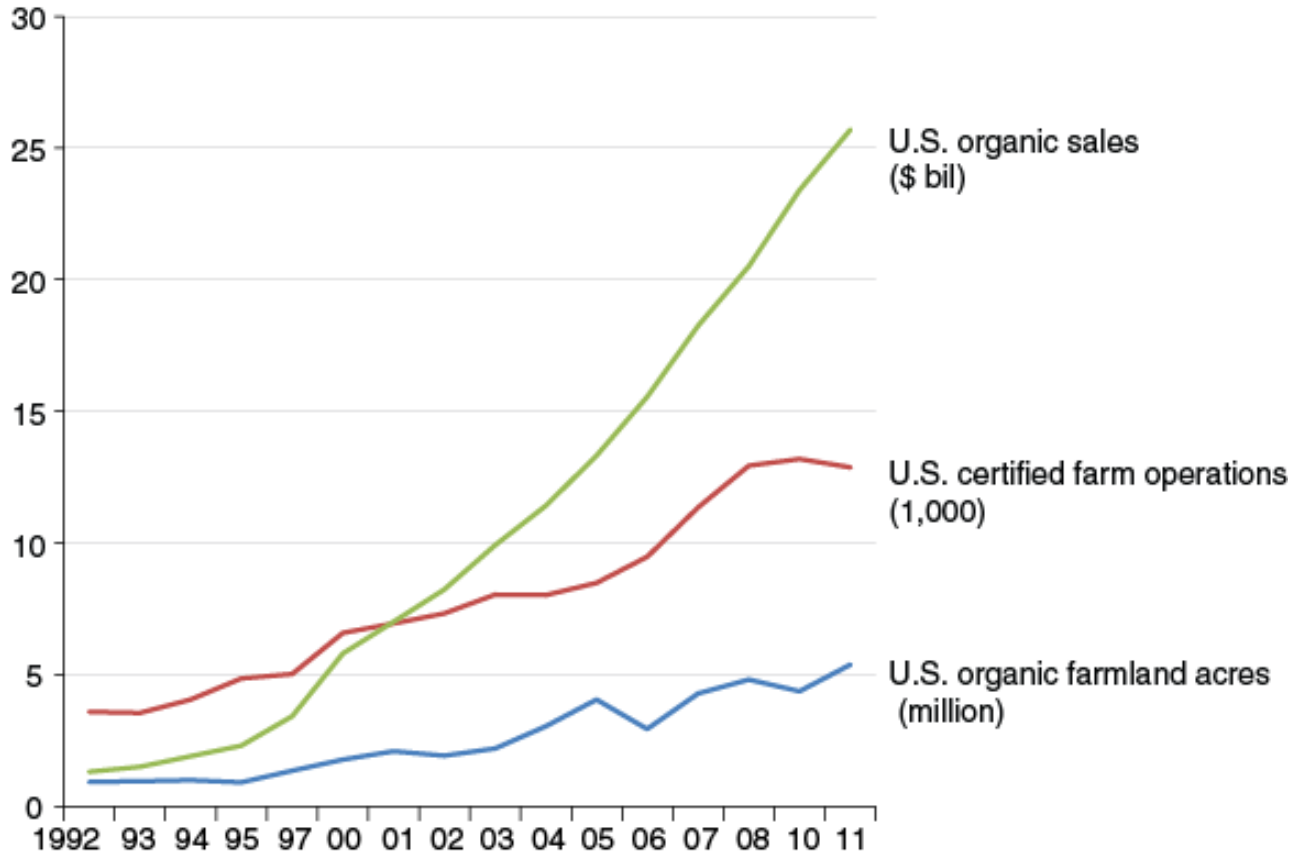
Animals are provided with organic feed and they are allowed access to the outdoors.



Vegetables, grain, meat, eggs and fibers are produced organically



Growth in U.S. organic food sales has outpaced growth in organic farmland since the late 1990s



Source: USDA, Economic Research Service, and Natural Foods Merchandiser and Nutrition Business Journal.



ORGANIC FARMING

Organic farming works in harmony with nature, the techniques and materials are aimed to achieve good crop yields without harming the environment or the people.

On an **organic farm** a range of organic methods are used at the same time to allow them to work together for the maximum benefit.

Organic farming involves careful use of water resources.

Organic farmers create a healthy balance between nature and farming where crops and animals can grow.

They use: good soil structure and fertility, recycled and composted crop wastes and animal manures, crop rotation, green manures, careful planning and crop choice to control pests, diseases and weeds, resistant crops and natural pesticides.



AIMS OF ORGANIC FARMING

Organic farming aims to:

- increase long-term soil fertility
- Control pests and diseases without harming the environment
- Ensure that water stays clean and safe
- Produce nutritious food, feed for animals and high quality crops.

Organic farming doesn't use artificial fertilizers and herbicides as they pollute rivers, lakes, water, they are easily washed from the soil, they produce soils with a low organic matter content.

Organic farming avoids artificial pesticides that can stay in the soil for a long time and enter the food chain where they build up in the bodies of animals and humans causing health problems. Organic farming doesn't use artificial chemicals which destroy micro-organisms in the soil so the soil has a poor structure.



EATING IS A NECESSITY

GIULIA SANTOMAURO

EATING CONSCIOUSLY IS AN ART

Eating vegetarian:

Soya meat or TVP (textured vegetable protein) which is produced from soya beans in many Asian countries. Soya meat is rich in protein (over 50% of protein content), the end product is similar to meat.

Tofu: Asian foodstuff made from soya. It replaces meat, it is made by adding a coagulant to soya milk and compressing the protein solids until the consistency is achieved. Tofu is easily digested, it contains essential amino acids. It can be seasoned in many ways.

Vegetarian meat or wheat gluten or seitan: it consists of the protein components gliadin and glutenin which are isolated from wheat, it is a raw material used for producing vegetarian sausages, burgers, nuggets, minced meat.



An aerial photograph of a vast agricultural field during sunset. The sky is a warm, golden orange, and the sun is low on the horizon, creating a long, soft shadow. In the foreground and middle ground, several green tractors are harvesting crops, moving in a line from the bottom right towards the top right. Each tractor is kicking up a thick plume of dust or chaff, which is illuminated by the low sun, creating a dramatic, hazy atmosphere. The field is divided into long, curved rows. In the background, there are some farm buildings, including a large white barn, and a few power lines stretching across the landscape.

FEEDING THE PLANET

By 2050 we'll need to feed two billion more people. How can we do that without overwhelming the planet?

A FIVE-STEP PLAN

Agriculture is one of the greatest contributors to global warming, emitting more greenhouse gases than cars, trucks, trains, and airplanes combined. These gases come from:

1. Methane released by cattle and rice farms, nitrous oxide from fertilized fields, and carbon dioxide
2. The cutting of rain forests to grow crops or raise livestock

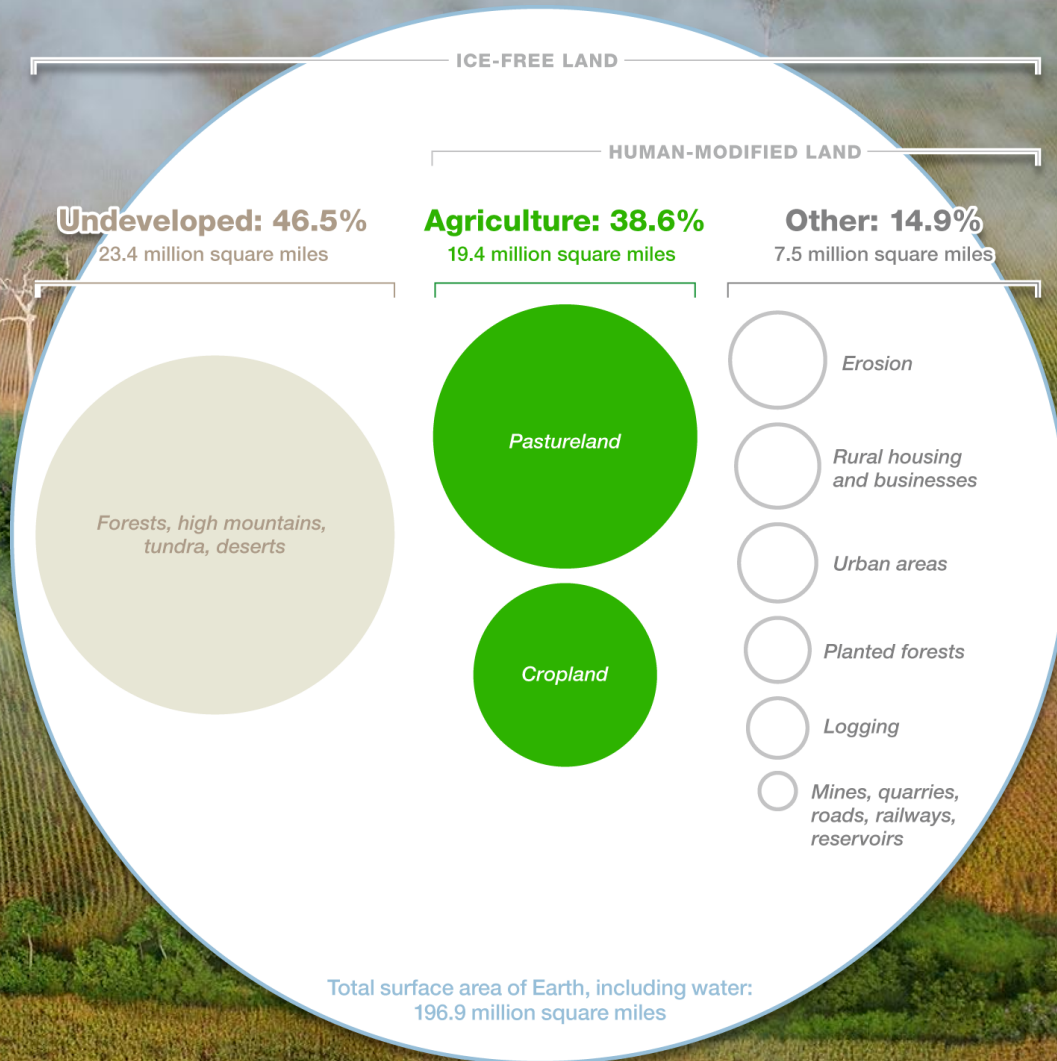
Farming is a major polluter, as runoff from fertilizers and manure disrupts fragile lakes or rivers.

A team of scientists proposed five steps that could solve the world's food dilemma.

1. FREEZE AGRICULTURE'S FOOTPRINT

From most of history, whenever we've needed to produce more food, we've simply cut down forests to make more farms.

Agriculture footprint has caused the loss of whole ecosystem around the globe, for example animal and plants in a particular area, the way they're related to each other and their environment.



2. GROW MORE ON FARMS WE'VE GOT

Since the '60s, the green evolution increased yield in Asia and Latin America using better crop varieties and more fertilizer, irrigation and machines; but with bigger environmental costs.

The focus is on increasing yields on less productive farmlands.



3. USE RESOURCES MORE EFFICIENTLY

We already have ways to achieve high crops while reducing the environmental impacts of conventional farming. The use of water and fossil-fuel-based chemicals is a process that cannot last or continue for a long time. Commercial farming has started to make huge improvements, finding innovative ways to better target the application of fertilizers and pesticides.

Many growers apply customized blends of fertilizer, which helps minimize the flow of chemicals into the nearby waterways.

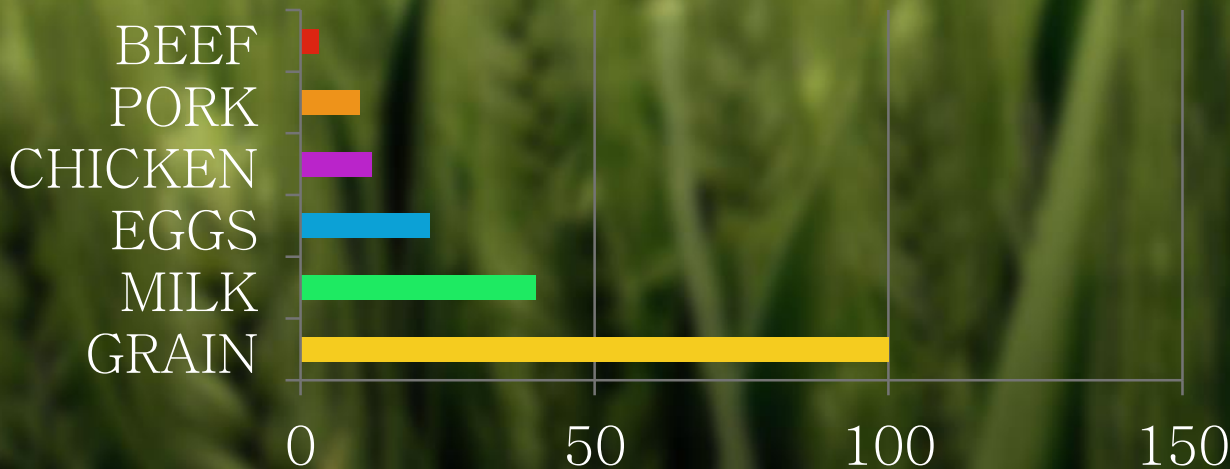
4. SHIFT DIETS

Today 55% of the world's crop calories feed people directly; the rest are fed to livestock or turned into biofuels and industrial products.

Many of us consume meat, dairy and eggs from animals raised on feedlots.

For every 100 calories of grain we feed animals, we get only about 40 new calories of milk, 22 calories of eggs, 12 of chicken, 10 of pork, or 3 of beef. Less meat-intensive diets could free up substantial amounts of food across the world.

CALORIES



A world demanding more

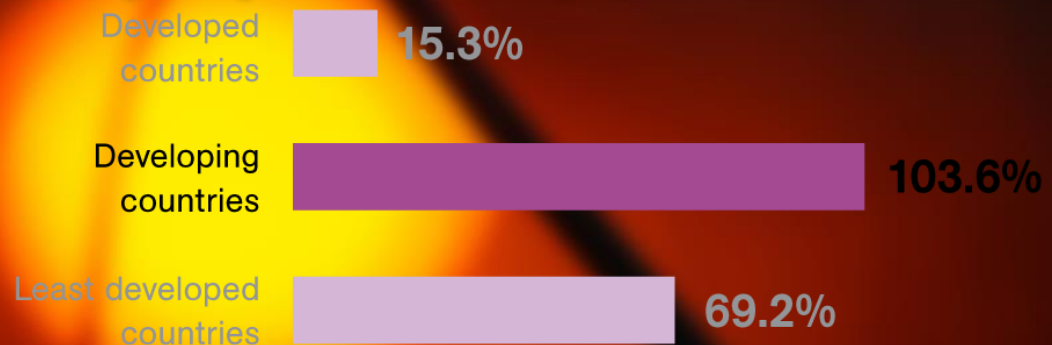
By 2050 the world's population will likely increase by more than 35 percent



To feed that population, crop production will need to double.



Why? Production will have to far outpace population growth as the developing world grows prosperous enough to eat more meat.



5. REDUCE WASTE

25% of the world's food calories are lost or wasted before they can be consumed.

- ⦿ In rich countries most of that waste occurs in homes, restaurants, or supermarkets.
- ⦿ In poor countries the food is often lost between the farmer and the market, due to unreliable storage and transportation.

Consumers could reduce waste by taking such simple steps as serving smaller portions, eating leftovers, and encouraging cafeterias, restaurants, and supermarkets to develop waste-reducing measures.



FEEDING THE PLANET

Stefano Caldarini

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Website: <http://www.nationalgeographic.com/foodfeatures/feeding-9-billion/>



FOOD FOR THE FUTURE

THE INFLUENCE OF CLIMATE CHANGE

GIULIA PACINI, GIULIA DE MARCHI, GIULIA GIACOMELLI

THE INFLUENCE OF CLIMATE CHANGE ON FOOD

The main atmospheric events can have a huge impact on livestock production:

- lack of rainfall or too much rainfall
- extremes like flooding storms strongly influence local crop yields and livestock production.

Even though modern farming technologies have helped reduce the vulnerability of food production, recent droughts in the USA, Russia, China have highlighted a possible future of vulnerability on cereals

Droughts, floods and fires could damage crops: experts predict improving conditions for food production in the mid to the high latitudes including northern USA, Canada, northern Europe and Russia. Conversely subtropical areas such as the Mediterranean areas and parts of Australia and the low latitudes could experience declining conditions .



GLOBAL FOOD PRODUCTION AFFECTED BY CLIMATE CHANGE

The future of global food production will depend on climatic changes:

- the richer, higher latitude countries are likely to adapt and exploit changing climatic conditions,
- the subtropical states and the states on low latitudes will be damaged.

If the global temperature rises, a larger area of the world will be in trouble.

In Africa yields from rain-fed agriculture could decline by as much as 50% by 2020.

FOOD PRODUCTION

- Climate change is affecting the world's fisheries which provide an important source of food for at least half the world's population .
- Pollution and problems like warming surface waters in the oceans, rivers, lakes as well as sea level rise and melting ice will lead to the extinction of a lot of fish species, some of them are adapting by migrating to high latitudes, some others such as Arctic or freshwater species have nowhere to go.
- Climate change is not a big factor compared with the increases in **global food demand** expected in the next decade.

There will be more people to feed, between one and three billion, more land and water resources will be required but despite plentiful supplies of food globally, almost one billion people are undernourished.

In order to limit the long-run impacts of climate change, **food production** must become more resilient to climate but more sustainable and low-carbon itself.



SUSTAINABLE FOOD

Food is essential to life.

- It plays an important role in the economy.
- It also forms a relevant part of our cultural identity.
- Food affects not only people's health but it has also a significant impact on the environment.
- Food production implies the use of land and water resources, pollution, chemical products such as herbicides and pesticides.



SUSTAINABLE FOOD

- Sustainable food system might be seen as a range of issues such as
 1. security of the supply of food
 2. health
 3. safety
 4. affordability
 5. quality
 6. a strong food industry in terms of jobs and growth
 7. environmental sustainability in terms of climate change
 8. biodiversity
 9. water and soil quality.
- The food system is driven by many economic, cultural and environmental factors.

In the last few decades the trend has been towards less sustainable and less healthy diets as people consume too much fat and sugar, too many calories.

Hopefully this trend will change towards sustainability

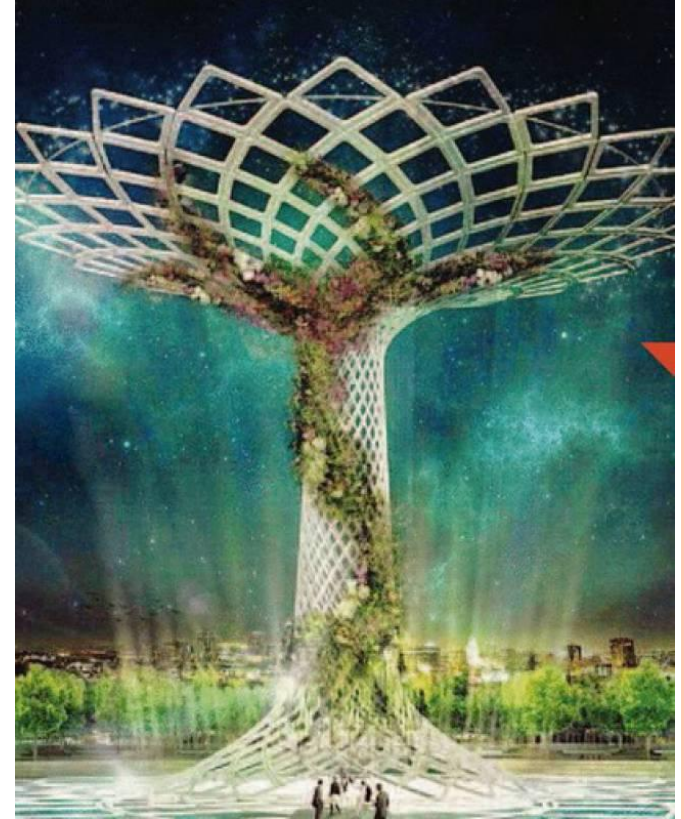


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CONCLUSIONS

EXPO project can be an opportunity for everyone to raise consciousness on the importance of food as:

- Nutrition
- Culture
- Sustainability



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