

The background features a horizontal, cloud-like shape filled with a blue ink wash. Within this shape, there is a faint, light blue line drawing of a cityscape, showing buildings and a network of streets. The overall effect is artistic and atmospheric.

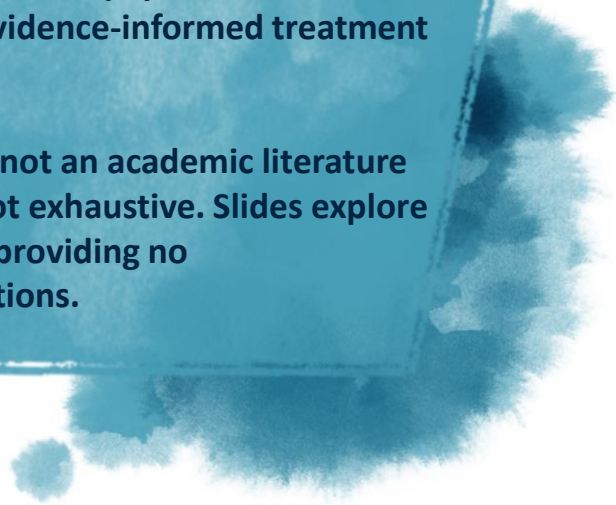
Meat & Health



AN EXPLORATION

These slides explore the main connections between meat production & consumption in Europe and public health.

Health impacts described refer to the situation today: not to possible alternative production & consumption scenarios.



Slides are an invitation for further debate, research & informed action.

They are based on a paper that aims at a balanced & evidence-informed treatment of the topic.

However: it's not an academic literature review and not exhaustive. Slides explore connections, providing no recommendations.

FOOD SYSTEMS

DRIVE →

DIRECT AND INDIRECT

HEALTH IMPACTS

FOOD & HEALTH
DIMENSIONS (IMPACT CHANNELS)

Nutrition

Zoonotic diseases (food
borne and non-food borne)

Antimicrobial resistance

Air quality

Climate change

Nature & biodiversity

Occupational factors

Socio-economic factors

Positive impacts

Non-communicable
diseases (NCDs)

Communicable
diseases

Injuries

POTENTIAL FUTURE
HEALTH IMPACTS



EU:
MEAT
PRODUCTION
& CONSUMPTION
NEXUS

NOT
JUST ABOUT
NUTRITION
& FOOD SAFETY

NUTRITION

is ALWAYS IMPORTANT,
BUT it is
ESPECIALLY
CONSEQUENTIAL DURING
SENSITIVE STAGES IN
LIFE ...

Pregnancy

early
Childhood
& youth



BUT EXCESSIVE
CONSUMPTION OF



RED AND
ESPECIALLY
PROCESSED
MEAT...

HAS BEEN
LINKED WITH A RANGE
OF NEGATIVE HEALTH
IMPACTS



MEAT
BOTH 'RED' & 'WHITE'
IS HIGHLY NUTRITIOUS

A REDUCTION
IN AVERAGE MEAT
INTAKE IN HIGH -
CONSUMING REGIONS
(e.g. EUROPE)
AS PART OF A DIVERSE
& NUTRITIOUS DIET,
CAN LEAD TO HEALTH &
ENVIRONMENTAL BENEFITS



ANIMAL
FOOD =
RESPONSIBLE FOR MOST
'FOOD SAFETY' OUTBREAKS
IN EUROPE.

FOOD BORNE



((eg. CAMPYLO BACTER)
SALMONELLA, E-COLI))

75% OF NEW OR
EMERGING INFECTIOUS
DISEASES (ZOO NOTIC ORIGIN)

ZOO NOTIC
DISEASES

= INFECTIOUS
DISEASE
TRANSFERRED FROM
NON-HUMAN ANIMALS
TO HUMANS

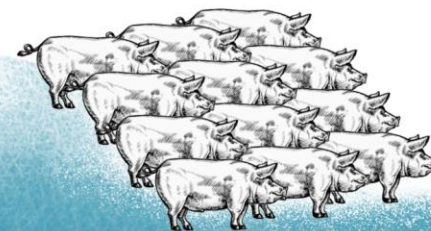
NON FOOD-BORNE



((eg. SARS, Swine flu
AVIAN INFLUENZA,
Q-FEVER))



AGRICULTURAL
DRIVERS (eg BIODIVERSITY LOSS)
HAVE BEEN ASSOCIATED WITH OVER
50% OF ZOO NOTIC INFECTIOUS
DISEASES IN HUMANS
GLOBALLY SINCE 1940.



HIGH-DENSITY ANIMAL
FARMING SYSTEMS CAN ACT
AS 'LABORATORIES' FOR NEW
ZOO NOTIC DISEASES &
INCREASE THE RISK OF
SEVERE CONTAMINATION
EVENTS



HUMAN
MEDICINE

→ LIKELY CAUSE #1

CAUSES

ANTIBIOTICS
OVERUSE IN
HIGH-DENSITY
ANIMAL FARMING
SYSTEMS



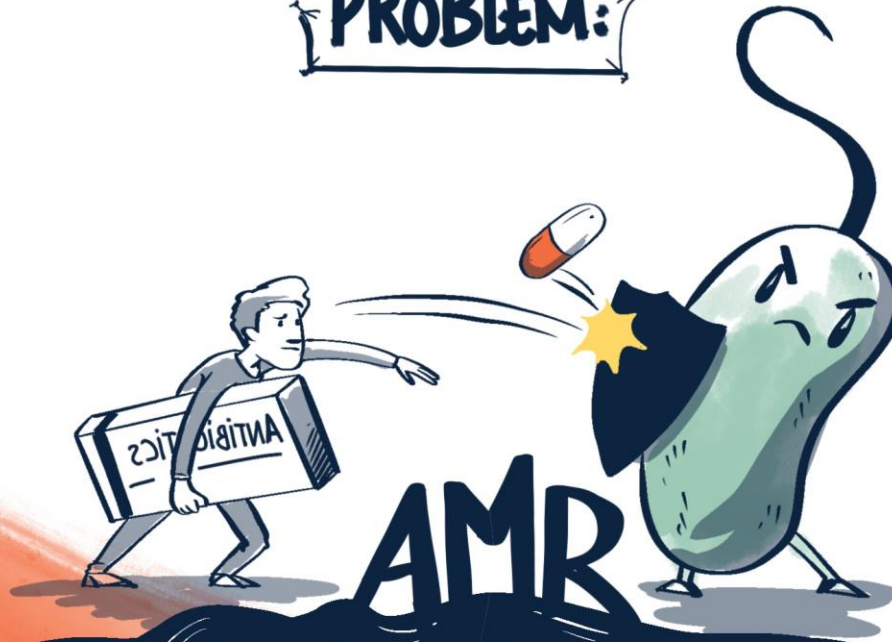
RESISTANCE
BETWEEN
ANIMALS &
HUMANS
TRANSMITTED BY

① DIRECT CONTACT

② FOOD CHAIN

③ ENVIRONMENT

PROBLEM:



ANTIMICROBIAL RESISTANCE THREATENS THE EFFECTIVE
TREATMENT OF INFECTIONS & ENDANGERS CRITICAL
HEALTHCARE INTERVENTIONS – FROM SURGERIES TO
CHEMOTHERAPY.



BACTERIA RESISTANT TO ANTIBIOTICS KILL
AT LEAST 33,000 PEOPLE IN EUROPE EACH YEAR



LEFT UNADDRESSED, 10 MILLION PEOPLE MAY
DIE OF AMR GLOBALLY BY 2050

SOLUTIONS

LIMITING
ANTIBIOTICS USE

PROBABLY THE MOST
LONG-TERM WAY TO
REDUCE RESISTANCE

PRODUCTION
SYSTEMS

BASED ON ANIMAL
WELFARE ARE
PROMISING SOLUTIONS

AIR POLLUTION

IS EUROPE'S #1 HEALTH RISK

PARTICULATE MATTER

POLLUTION STANDS OUT

AMMONIA (NH₃)

CONTRIBUTES TO PM_{2.5} FORMATION

PM_{2.5}

†
- NEARLY -
380,000
PREMATURE
DEATHS
IN EUROPE IN
2018

estimates
vary...

BUT SOME
FIND NH₃ TO BE THE
LARGEST RELATIVE CONTRIBUTOR
TO PM_{2.5} FORMATION
IN EUROPE.

OVER
90%

OF NH₃ IN EUROPE IS

EMITTED BY AGRICULTURE



ANIMAL FARMING



FERTILISE USE

CLIMATE CHANGE

future?

IMPACTS MAY BE
INCOMPARABLY GREATER,
DEEPLY AFFECTING
NATURAL CONDITIONS
& SOCIAL DYNAMICS

ALREADY IMPACTING EUROPE
& CONTRIBUTING TO ITS BURDEN
OF DISEASE...

MEAT &
OTHER ANIMAL FOODS:

14.5%
OF ALL
EMISSIONS



GLOBAL FOOD SYSTEM

21-37%
OF TOTAL GREENHOUSE
EMISSIONS



- ◉ HEAT RELATED DEATHS
- ◉ FLOODS
- ◉ INFECTIOUS ILLNESSES
- ◉ MENTAL ILL-HEALTH
- ◉ HEALTH INEQUALITIES



CONTRIBUTION
OF ANIMAL
SOURCED FOODS
TO EUROPEAN
TOTAL EMISSIONS
APPEARS
EQUIVALENT TO
GLOBAL EMISSIONS

PLANETARY HEALTH: HUMAN HEALTH &
HUMAN CIVILISATION DEPEND ON FLORISHING
NATURAL SYSTEMS

NEW
MEDICINAL
PRODUCTS

BIODIVERSITY

MENTAL
HEALTH

NON-COMMUNICABLE
DISEASES/ INFECTIOUS
DISEASES

PERMANENT
GRASSLANDS WITH
GRAZING RUMINANTS CAN HAVE
POSITIVE BIODIVERSITY EFFECTS



LOSS

OF BIODIVERSITY &
ECOSYSTEM SERVICES
DECLINE. GLOBALLY & IN
EUROPE

DO WE HAVE
ADEQUATE METRICS TO
CAPTURE THE FULL
HEALTH IMPACTS?

MAIN CONTRIBUTOR
TO BIODIVERSITY
LOSS IN EUROPE

ANIMAL PRODUCTION

IMPORT OF
DEFORESTATION
THROUGH e.g.
ANIMAL FEED.

PRIMARY DRIVER OF
BIODIVERSITY LOSS & ECOSYSTEM SERVICES
DECLINE

AGRICULTURE

TODAY:
A STAGGERING

ESPECIALLY THROUGH:

- LAND USE
- LAND USE CHANGE
- POLLUTION

FOOD
SECURITY

WATER
QUALITY &
AVAILABILITY

CLIMATE
REGULATION

POLLINATOR
DECLINE

SOIL
DEGRADATION

AGROCHEMICALS
USE (FEED PRODUCTION)



GROWING UP
ON A FARM IS ASSOCIATED
WITH LOWER ASTHMA & ALLERGIES



OCCUPATIONAL CONDITIONS

WORK IN FOOD & AGRICULTURE
CAN BE...



HIGHLY SATISFYING

A RISKY PROFESSION



EXPOSURE TO
AGROCHEMICALS



MUSCULOSKELETAL
DISORDERS



RESPIRATORY
DISEASE

★ RISK OF AMR



MENTAL ILL-HEALTH

PRECARIOUS CONDITIONS FOR
FOOD WORKERS



(e.g. in slaughterhouses,
migrant labour...)

PART OF A
CHERISHED SOCIO-CULTURAL
IDENTITY & 'WAY OF LIFE'



SOCIO-ECONOMIC FACTORS

CITIZEN-CONSUMERS

HIGH QUALITY (& COST)

DIFFERENCES IN SOCIO-ECONOMIC STATUS: DIFFERENCES IN CONSUMPTION PATTERNS OF ANIMAL SOURCED FOODS

• GENDER • HOUSING • SOCIAL PROTECTION • EDUCATION • EMPLOYMENT • INCOME

PEOPLE EXPOSED TO SOCIO-ECONOMIC VULNERABILITIES:

DISPROPORTIONATELY BURDENED BY ILL-HEALTH — INCLUDING DIET-RELATED



MEAT CONSUMPTION OFTEN INTERLINKED WITH SOCIO-CULTURAL IDENTITIES

(SOCIO-CULTURAL STATUS)

STRONGLY INFLUENCE HEALTH

EU 20% OF PEOPLE AT RISK OF POVERTY & SOCIAL EXCLUSION

11% UNABLE TO AFFORD A NUTRITIOUS MEAL EVERY 2ND DAY!

LOW QUALITY (& COST)

WORK IN AGRICULTURE
& FOOD SUPPORTS
MILLIONS OF LIVELIHOODS
IN EUROPE.

Providing:

SOCIO-ECONOMIC INFLUENCES (PRODUCERS)

contributing
to health &
well-being

social status

income

employment

LONG-TERM
SQUEEZE ON PROFITS

LOW WAGES &
UNATTRACTIVE
CONDITIONS IN MEAT
PROCESSING

NEW ENTRY
RATES ARE LOW

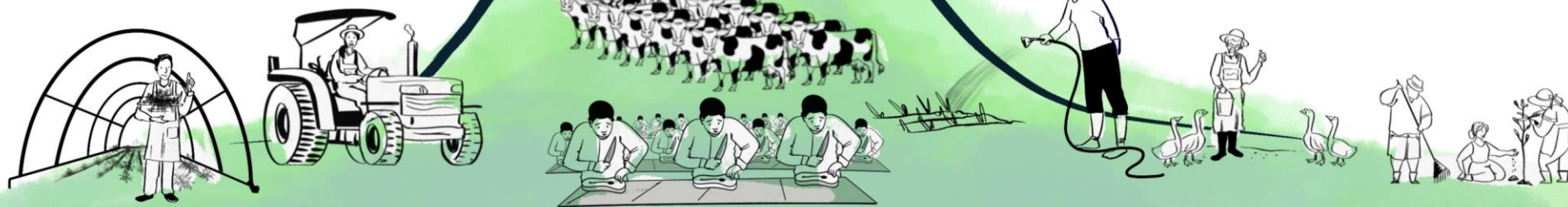
BUT-NOT ALL IS WELL
IN THE FARM ECONOMY:
NO FAIR STANDARD OF
LIVING FOR ALL

LARGE
DISPARITIES IN
INCOMES

EMPLOYMENT
& FARM NUMBERS
DECLINING

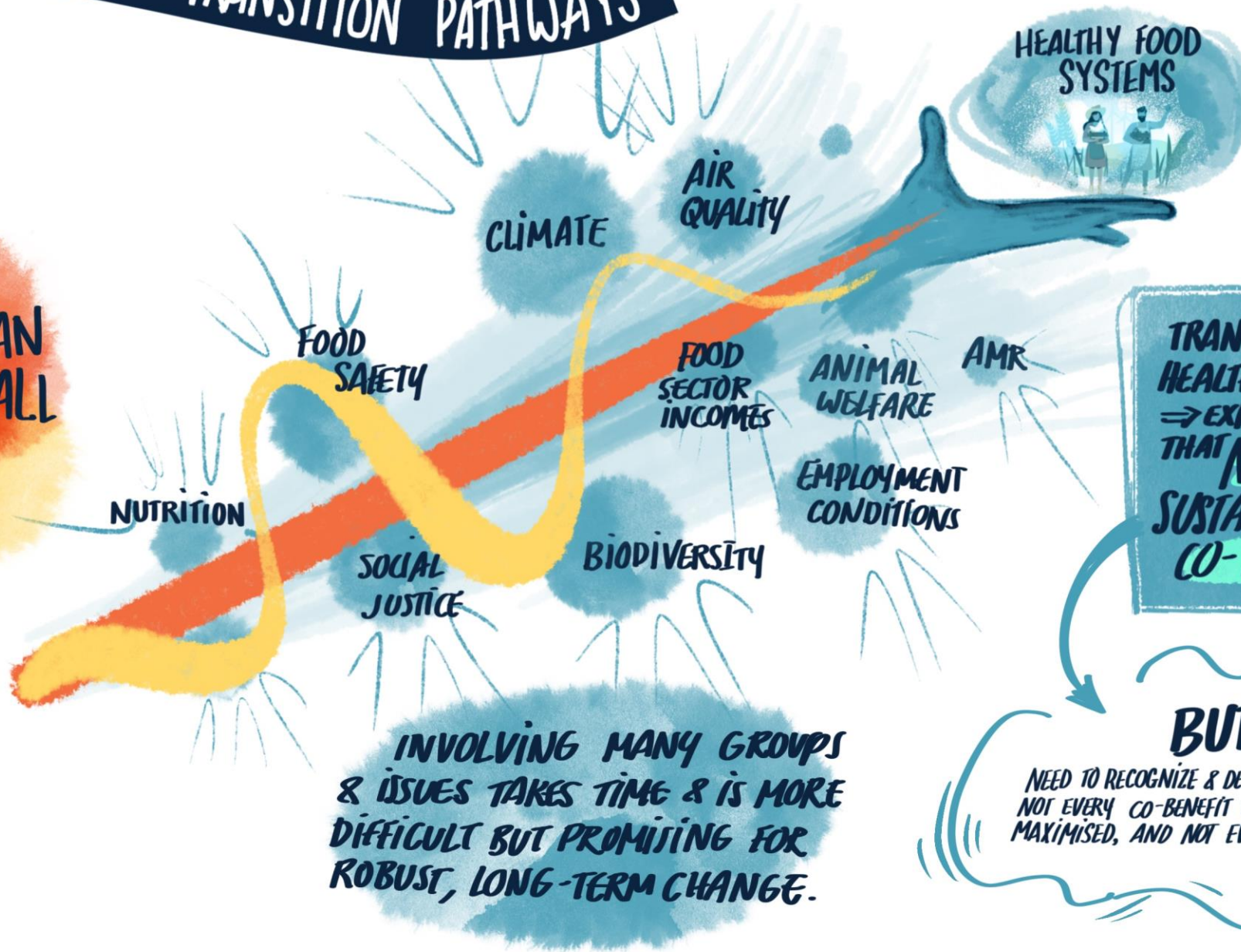
MEAT PRODUCTS FEATURE
HIGH AMONG THE TOP
VALUE FOODS IN THE
FOOD ECONOMY


ANIMAL PRODUCTION
REPRESENTS A MAJOR PART
OF THE FOOD ECONOMY



CREATING CO-BENEFITS TRANSITION PATHWAYS

NEED TO
FORMULATE AN
ANSWER TO ALL
FOOD-HEALTH
DIMENSIONS,
WITHOUT
SHORTCUTS!





These slides are based on the paper: “Meat Production & Consumption (in Europe) and Public Health. An exploration.” (2021)

**Prepared as input to the “Healthy Food Healthy Planet” initiative.
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Responsibility for content is only with the author.

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