

# FARM ANIMAL BREEDING – IMPLICATIONS FOR SOCIETY\*

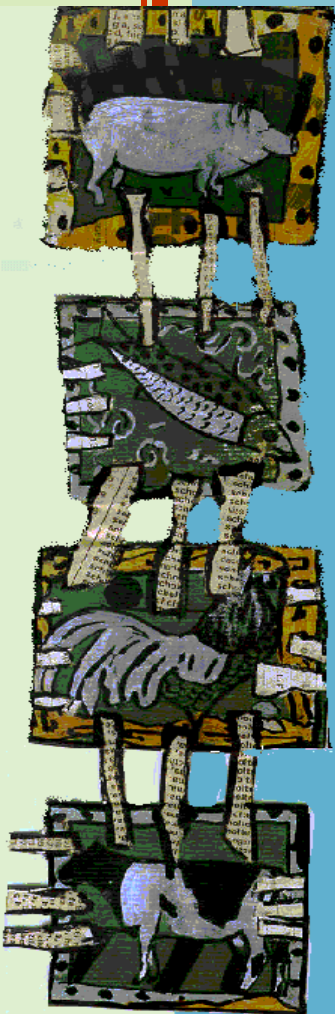
*J. Merks<sup>1</sup>, A.M. Neeteson<sup>2</sup>*

*\* The future developments in farm animal reproduction and selection and their ethical, legal and consumers' implications*

*BIO4-CT98-0055*

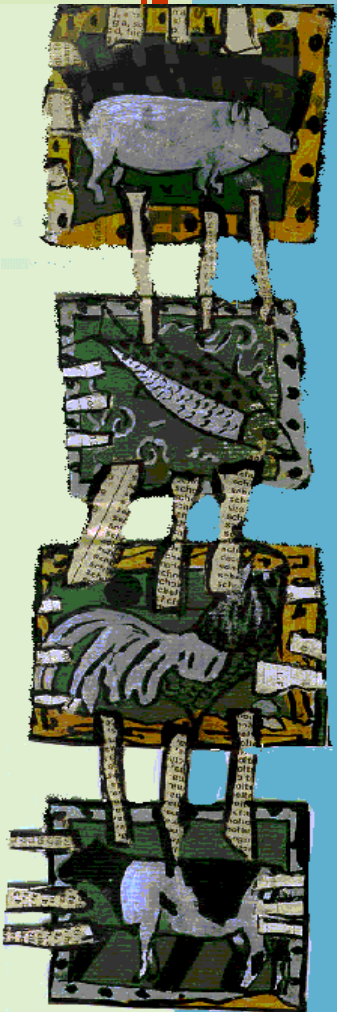
*<sup>1</sup>IPG - Institute for Pig Genetics B.V., Jan\_Merks@ipg.nl*

*<sup>2</sup>Farm Animal Industrial Platform (FAIP), Neeteson@iaf.nl*



# Farm Animal Industrial Platform

*Since 1995*



Forum of European farm animal  
breeding organisations

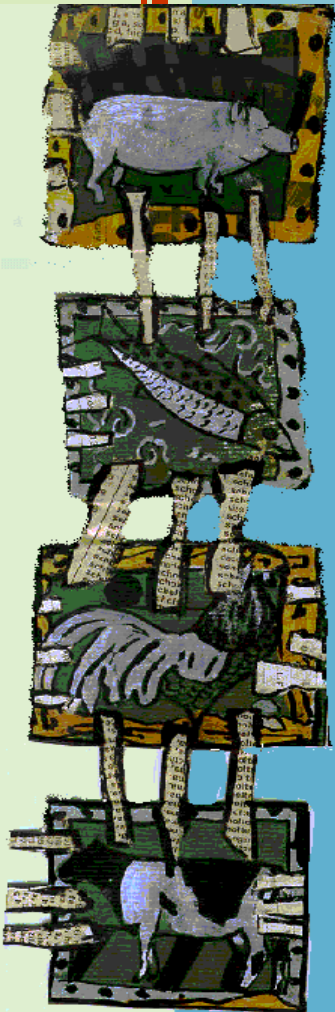
Breeding = reproduction and selection

# Farm Animal Industrial Platform

## *Farm Animal Reproduction and Selection*

### **Aims:**

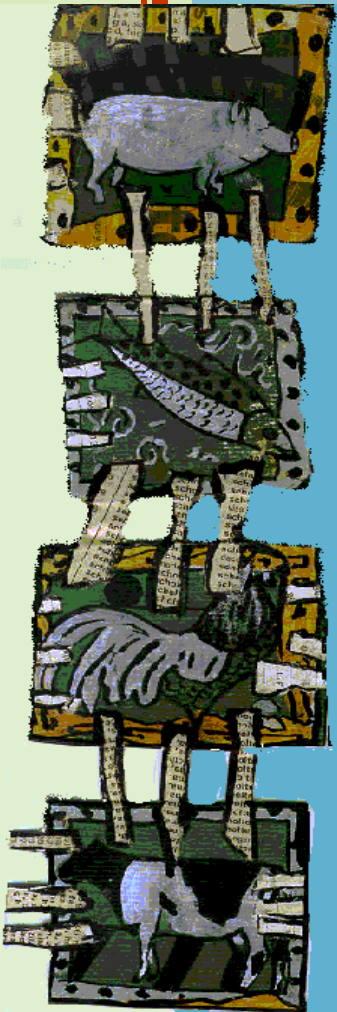
- European research & funding
  - *Research directions for industry*
- Researchers - industry
  - *Stimulate interaction & cooperation*
- Focal point
  - *Information European research funding & projects*
- Forum for farm animal industry
  - *Development & expression research related topics*
    - *patent directive*
    - *transparency*
    - *dialogue society*



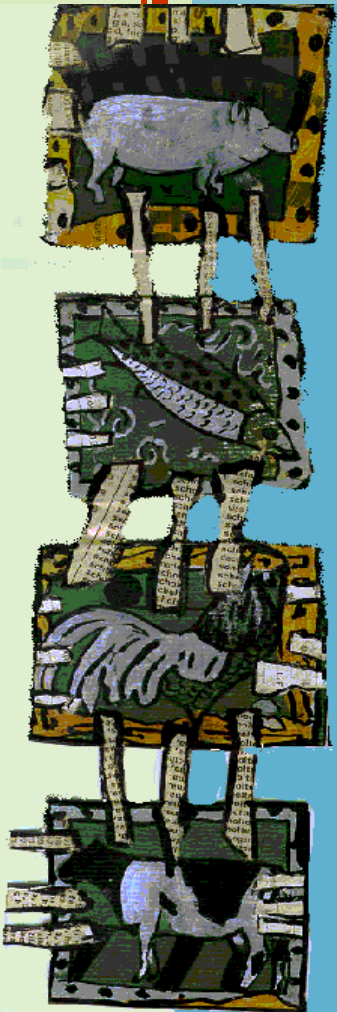
# Farm Animal Industrial Platform

## Members:

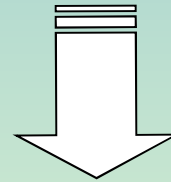
- European
- Companies, co-operatives and umbrella organisations
- Interest in farm animal reproduction and selection & research



# Farm Animal Industrial Platform



- Explain breeding to society
- Dialogue with society
- Improve knowledge



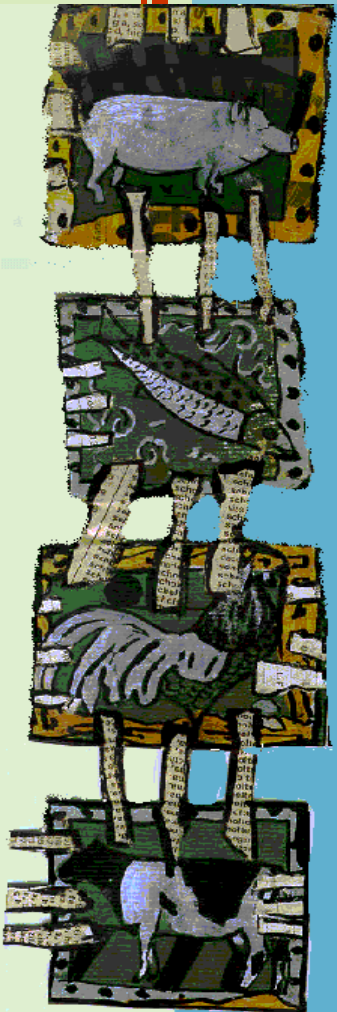
European project  
Farm Animal Breeding -  
Implications for Society

# Farm Animal Breeding Implications for Society

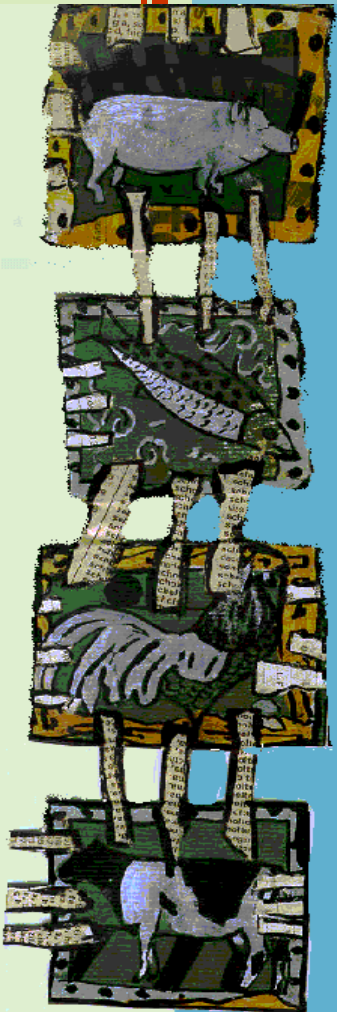
## GOAL:

- Picture farm animal breeding for society
- Picture ethical, consumer and legal aspects for breeders
- Dialogue and discussion
- Information for policy makers\*

\* *Extra*

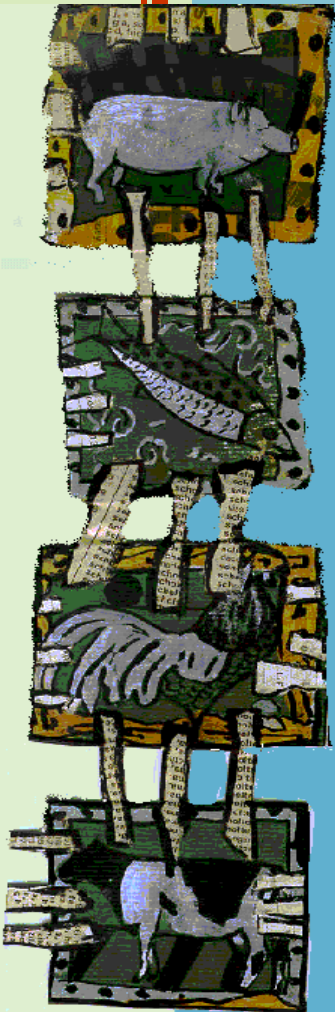


# Farm Animal Industrial Platform



- 1997/1998: FAIP informal forum
- Institute for Pig Genetics acts as the legal entity for the project

# Farm Animal Breeding Implications for Society



## A. Breeding and reproduction:

- FAIP/IPG - Merks, Neeteson
- Zootechnical Institute University Milan  
- Bagnato, Finocchiaro

## B. Ethics:

- KVL Frederiksberg - Sandøe, Christiansen

## C. Law:

- University Paris I - Noiville, Labrusse-Riou

## D. Consumers:

- Consumer&Biotechnology - Van Genderen



# Project Organisation

Working parties FAIP members:

Rum

Pigs

Poultry

Fish

Ethics

Law

Consumer

Scenarios

Workshop

*Report*

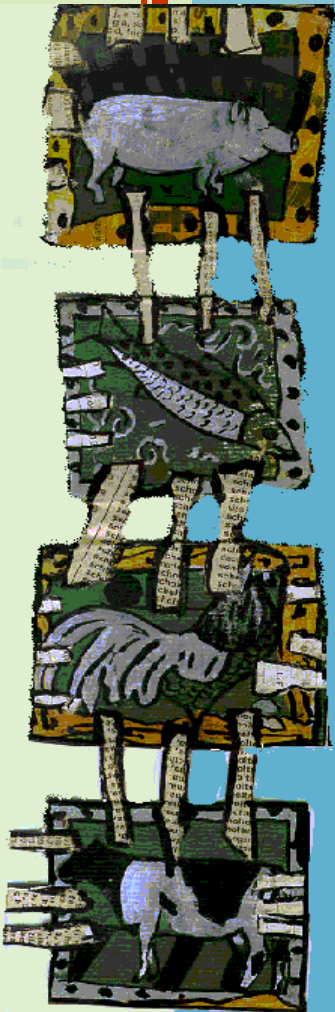
*Brochure* \*

1998

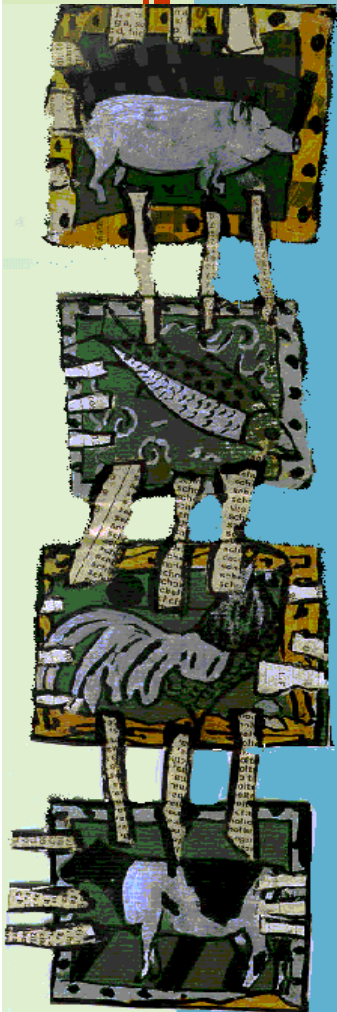
1999

9

\* Extra deliverable



# A. Breeding and Reproduction



*Breeding goal*

*Where to go?*

*Selection*

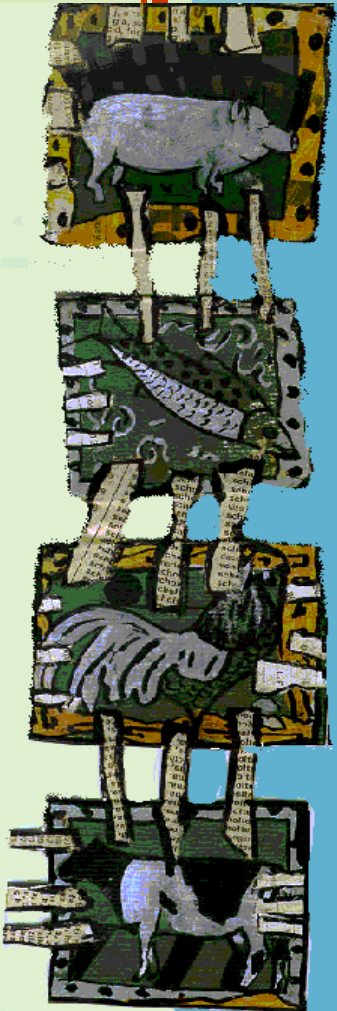
*Choice of parents*

*Breeding goal*

*Production next generation*

# A. Breeding and Reproduction

*Factors determining the future*



- (Bio)technologies
- Sustainability
- Biodiversity
- Structure of Farms
- Structure of animal breeding industry
- Improved computing facilities
- Market Globalisation
- Bio-ethics
- Legal developments
- Consumer

# A. Breeding and Reproduction

## Scenarios (1)

### ■ Three models

#### – Conventional path

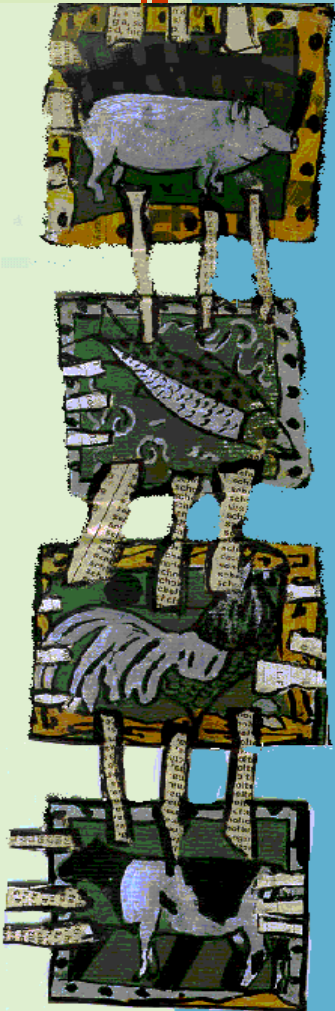
- similar to nowadays
- DRIVE: good quality, reasonable costs

#### – Alternative path

- e.g. niche markets, organic products
- DRIVE: production methods, special food markets

#### – Low cost path

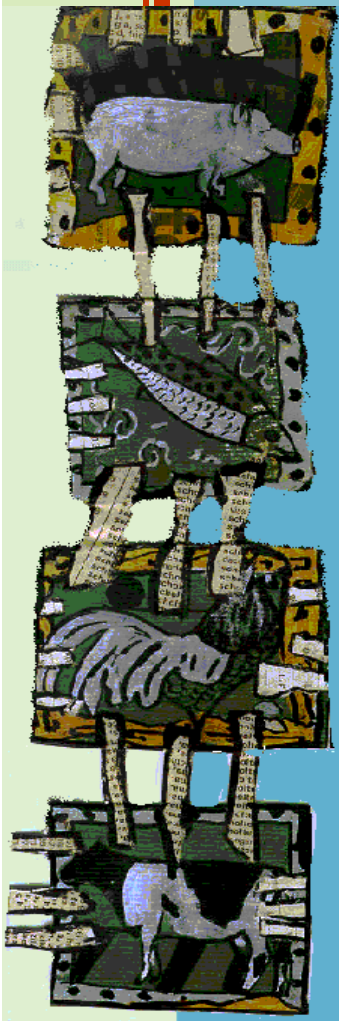
- aimed to reduce production costs
- DRIVE: safe, cheap food in global competitive climate



# A. Breeding and Reproduction

## Scenarios (2)

Today's perception - traditional aspects



Traditional Aspects	Conventional path	Alternative path	Low cost path
Decrease production costs	++	+/-	++++
Decrease variation	+	--	++++
Balanced breeding	++	++++	+

++++ used routinely

::

-- very unlikely to be applied

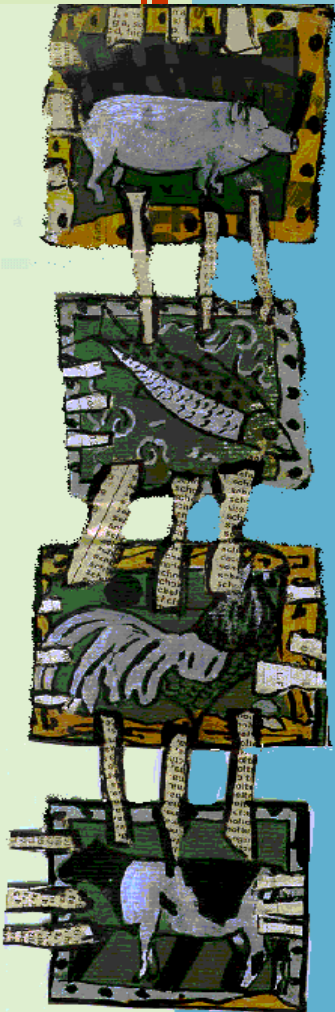
# A. Breeding and Reproduction

## Scenarios (2)

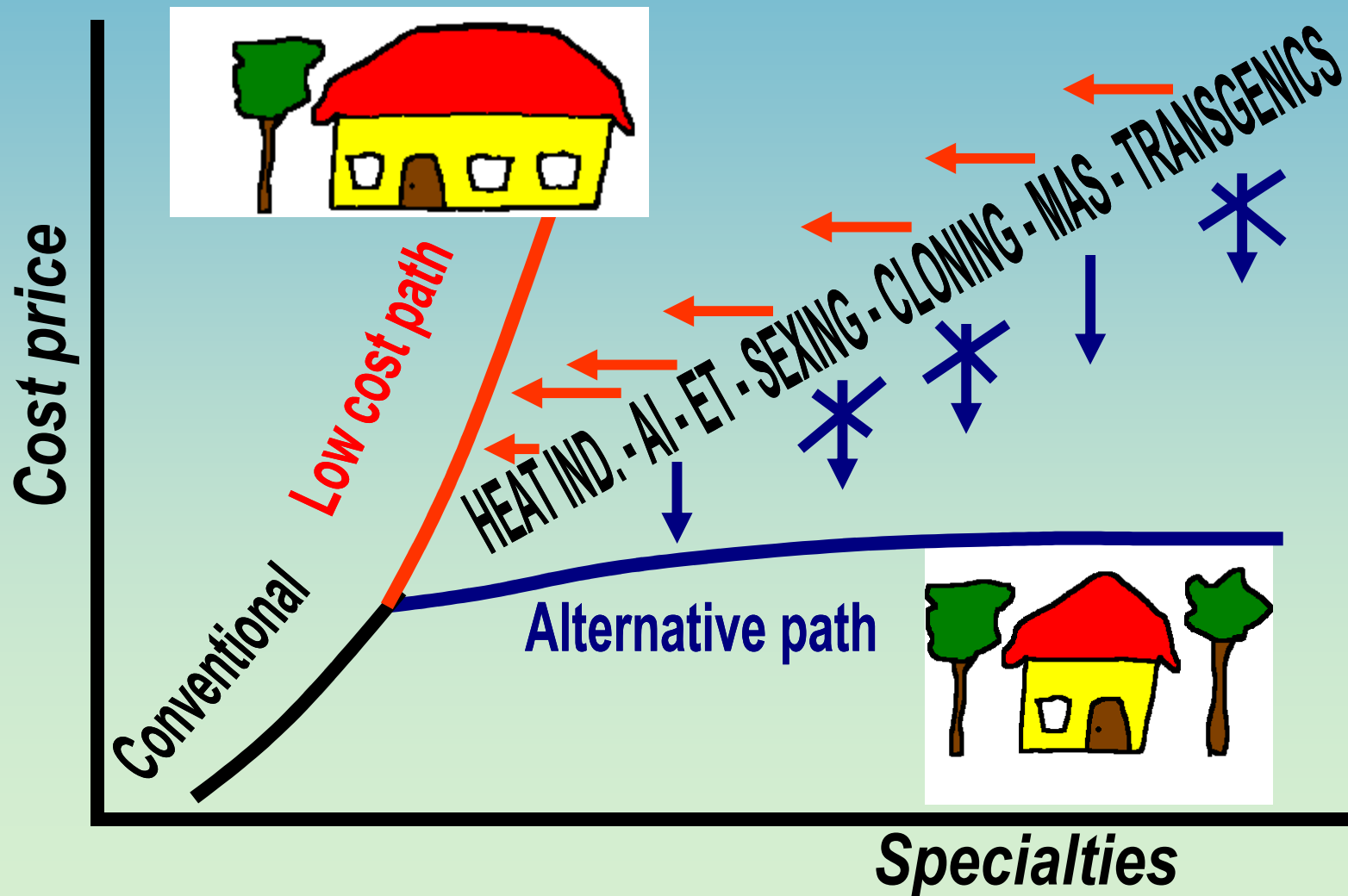
Today's perception – application of new tech

Technologies	Conventional path	Alternative path	Low cost path
MAS	+++	+++	++++
AI & Embryo Tech	+++	++	++++
Transgenesis	-	--	++
Triploidy (fish)	+	+/-	+++
Cloning	+/-	--	+++

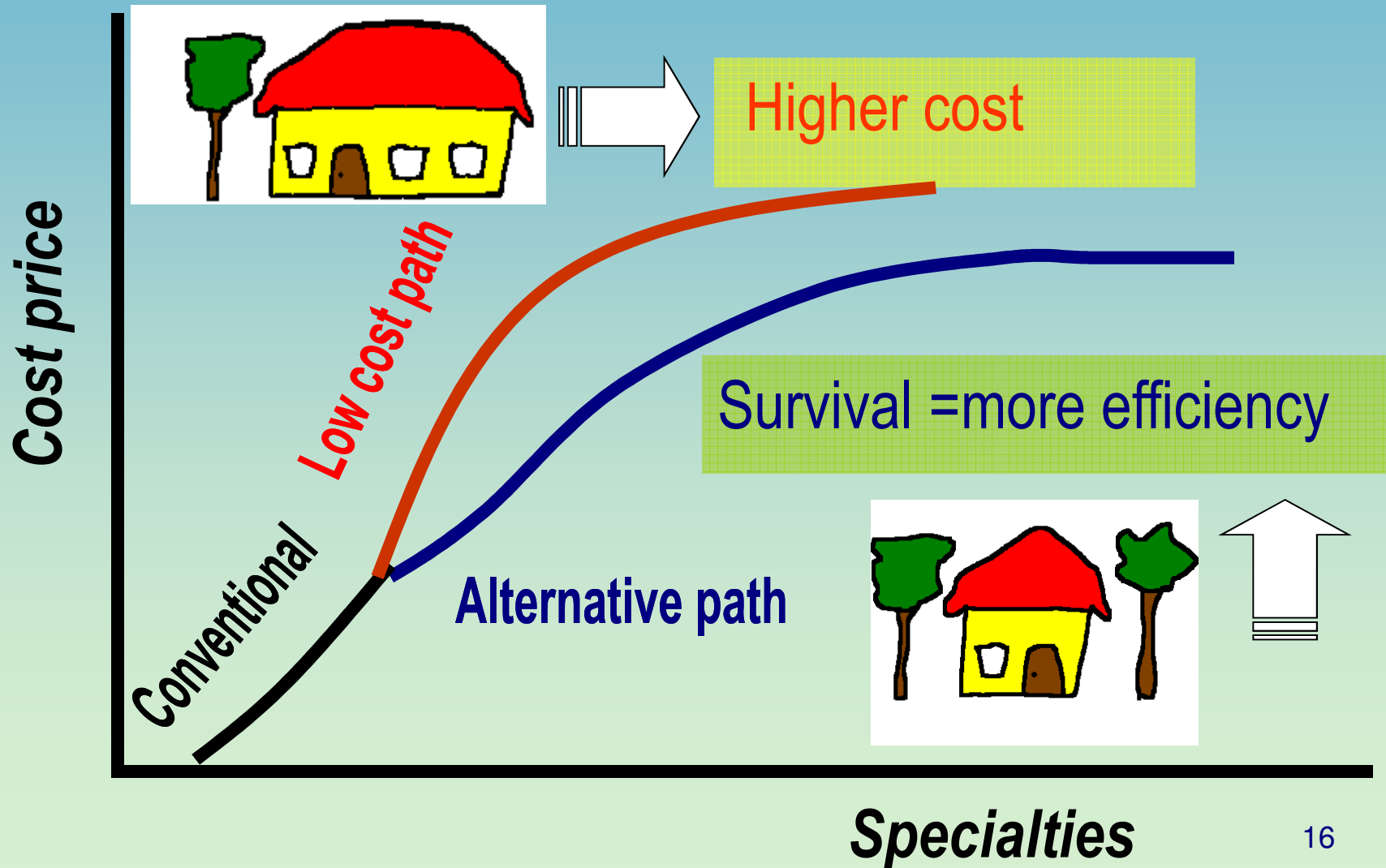
++++ used routinely      -- very unlikely to be applied



# A. Breeding and Reproduction



# A. Breeding and Reproduction

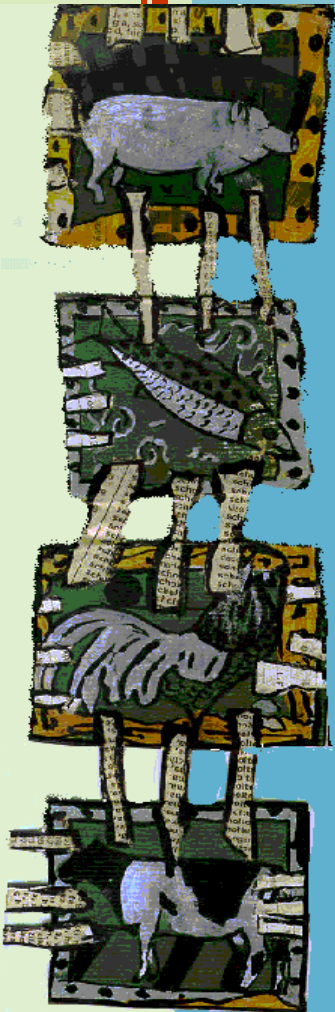




# A. Breeding and Reproduction

## *Conclusions:*

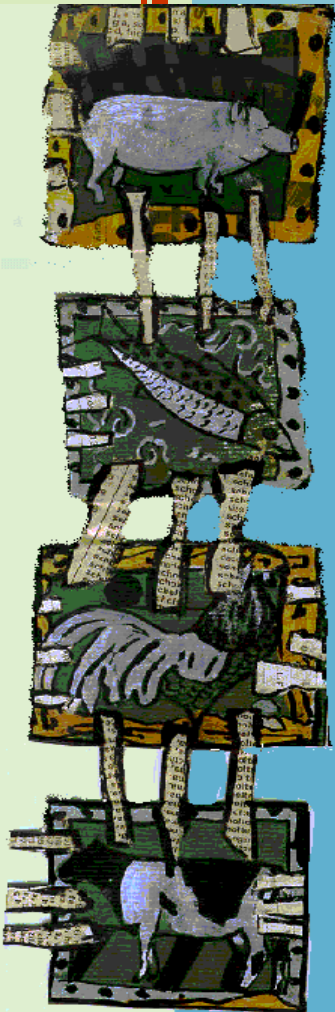
- Dialogue with society
  - fruitful
  - recommended in developing new concepts
- Alternative pathways
  - Unknown economic aspects
  - unknown risks



# B. Bio-ethics

*What are people worried about*

*in farm animal reproduction and selection?*



- Animal health undesirable side effects
- Animal welfare breeding goal, biotechnology
- Animal integrity
- Humans slippery slope, human health, milit. appl.
- Biology and environment  
diversity, loss individuality, distinction between species
- Biotechnology fear of unknown, unnatural techn.
- Cultural differences No information available

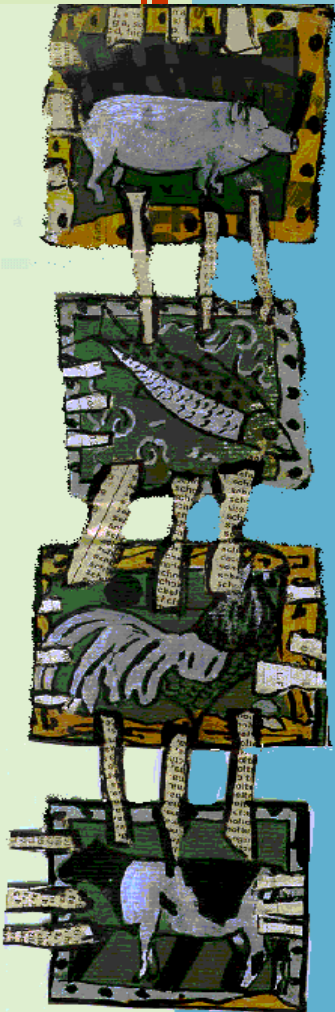
## B. Bio-ethics *How to weigh concerns?*

*Several theories: an action is right or wrong according to:*

- ✓ its consequences (**utilitarianism**)
- ✓ its principles (**deontology**)
- ✓ weighing several factors (**pluralist model**)
- ✓ are consequences reversible (**irreversibility**)
- ✓ if democratically controlled (**controllability**)

*Practical solutions:*

- ✓ “no, unless” policy
- ✓ “yes, but” policy
- ✓ *assessment expert committee*

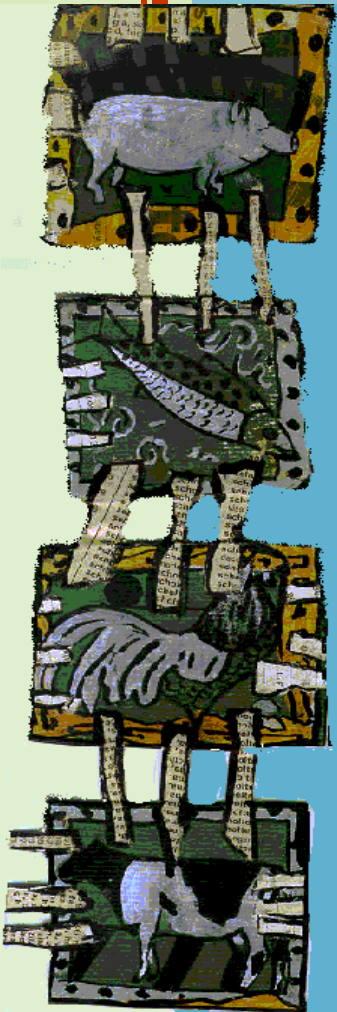


# B. Bio-ethics

---

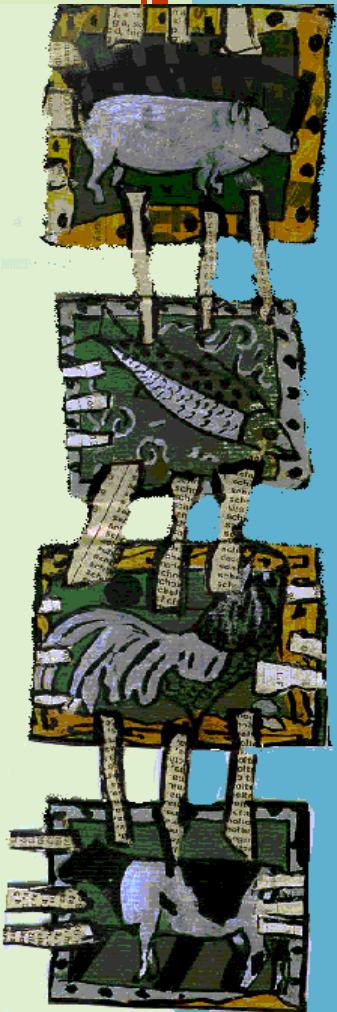
## *Conclusions:*

- Animal welfare
  - Major ethical concern
- In general:
  - Call for transparency and dialogue



# C. Legal Aspects

## *Patenting biotechnological inventions*

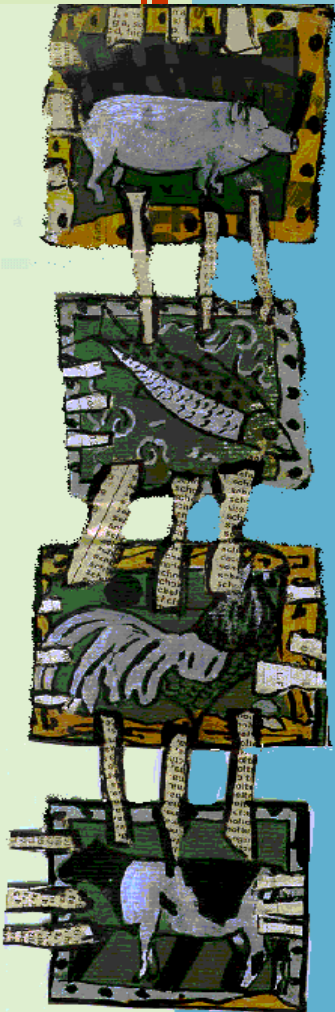


- What can be patented in Europe?
  - Technical processes
  - GM animals
- What not?
  - Animal varieties

# C. Legal Aspects

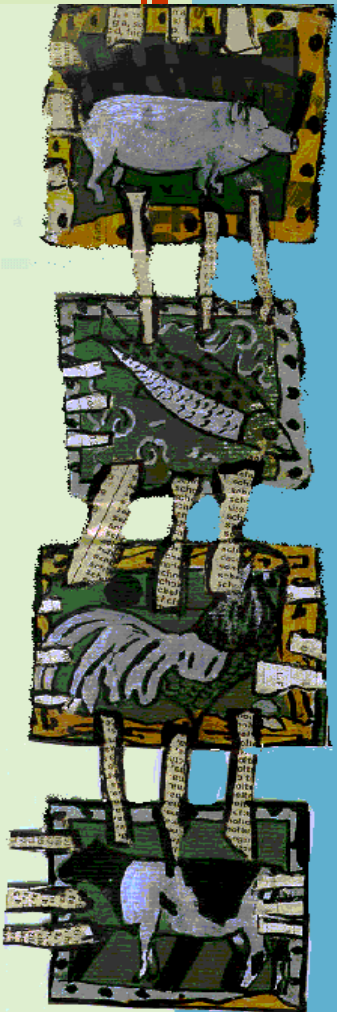
## *Patenting - potential risks*

- Animal variety
  - Difficult to define
- Competition risk
  - Patent holder vs traditional breeder
- Effects on R&D in animal biotech
  - Broad claims
  - Patent offices tend to accept broad claims
  - Patent claims NEVER affect traditional selection
  - Answers via court and patent office cases
- Farmers' privilege



# C. Legal Aspects

*Animal welfare*



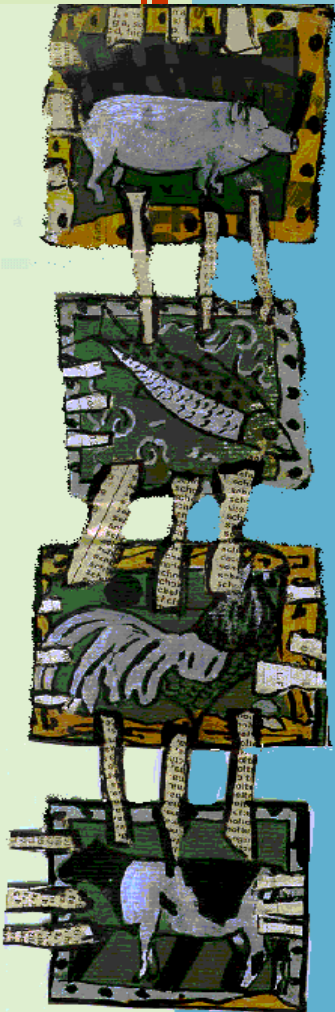
- Legislations on farm animal welfare
  - will influence breeding more and more
- Case by case assessment
  - may be a workable option

# C. Legal Aspects

---

## *Conclusions:*

- Broad claims
  - should be watched and when necessary sued
- Animal welfare:
  - legislation will influence future breeding work

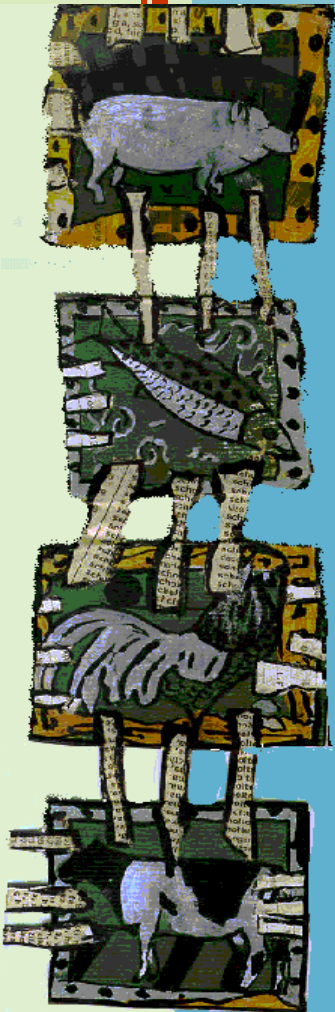




# D. Consumers

*Who is the consumer ?*

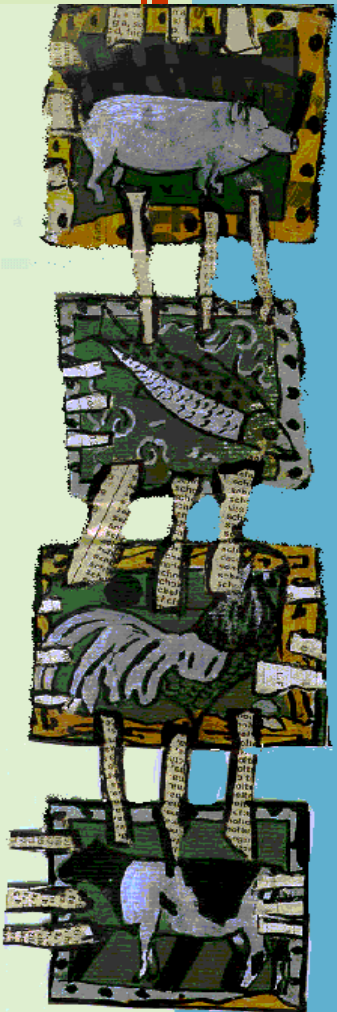
- Consumers
  - are like chameleons
- Behaviour
  - “education and social class” dependent
- Contradiction
  - citizens (idealistic) ↔ consumers (price-conscious)
  - idealised rural perception ↔ high tech reality
- Incidents
  - create panic reactions



# D. Consumers

## *Consumer concerns*

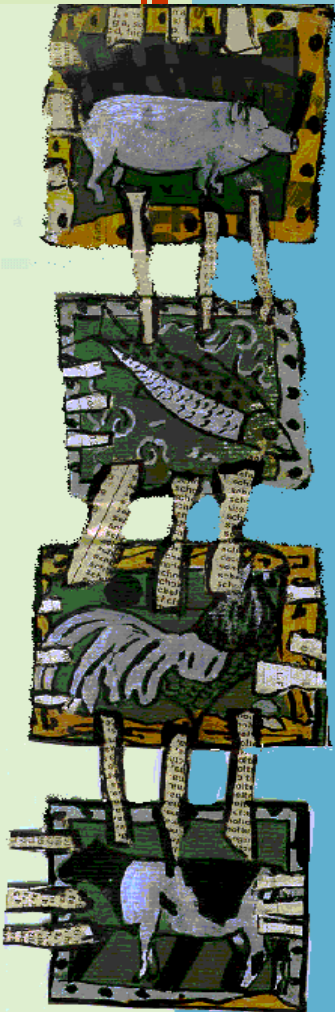
- Highlighted most
  - animal welfare
- GMO
  - animals for medical purposes, not for food
  - perception is: breeders do GM whether true or not
- **Advice:**
  - Take concerns of societal groups serious
  - Dialogue on animal welfare important



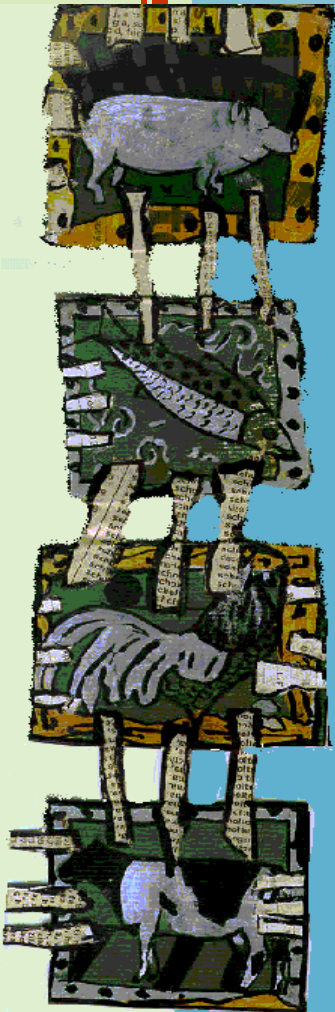
# D. Consumers

## *Conclusions:*

- Concerns of societal groups
  - should be taken serious
- Animal welfare
  - dialogue with welfare organisations important

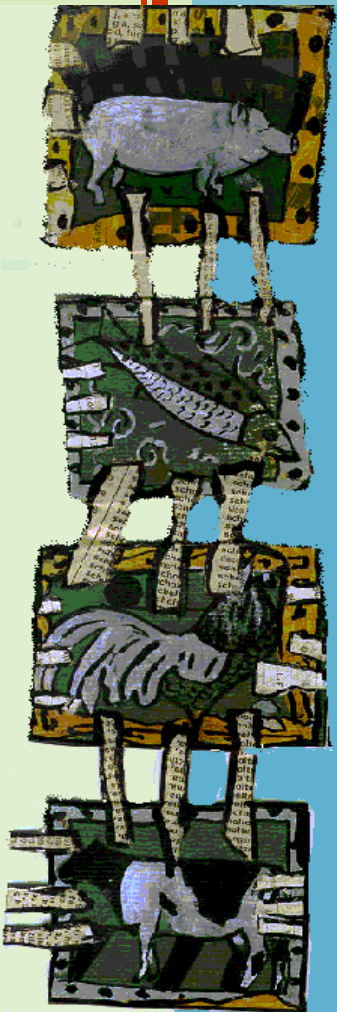


# Conclusions



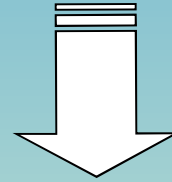
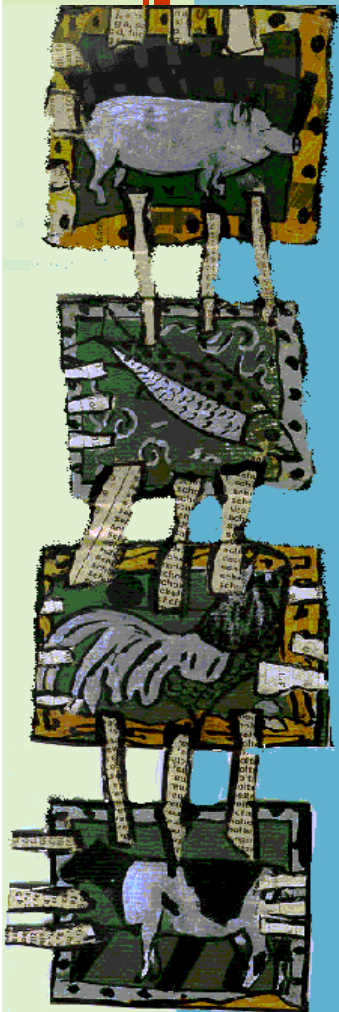
- Dialogue with society
  - Fruitful
  - Recommended (in developing new concepts)
- Alternative pathways
  - Unknown economic aspects
  - unknown risks
- Welfare
  - main issue in ethical, legal and consumers' essays

# More questions.....



- Will consumer pay for more extensive production?
- Awareness ethics & welfare
- Value different (European) cultures?
- Trade barriers
  - Would EC pay in WHO negotiations?

# Follow Up



European project  
Sustainable European Farm Animal  
Breeding And Reproduction  
(*SEFABAR*)

# Follow Up

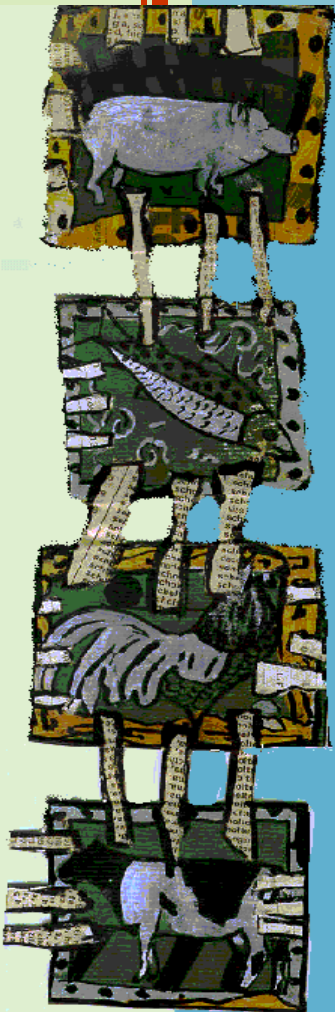
- Breeding and Reproduction Network

- FAIP / EAAP / WPSA / EAS
- scientists and industry

+

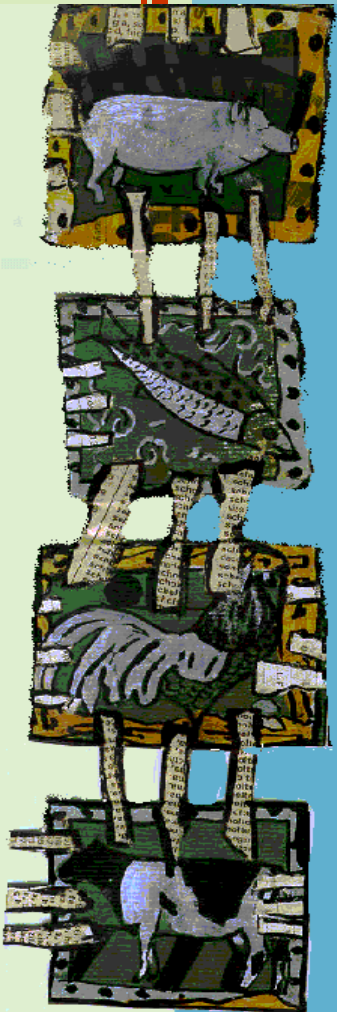
- Studies

- Bio-ethics
- Animal Welfare
- Cultural Differences
- Public Opinion
- Economy/World Trade



# Goal SEFABAR

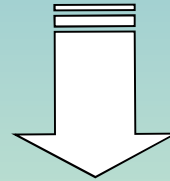
- What is sustainable breeding?
- Overview sustainable breeding research / business efforts
- Define sustainable breeding strategies
  - species (ruminants / pigs / poultry / fish)





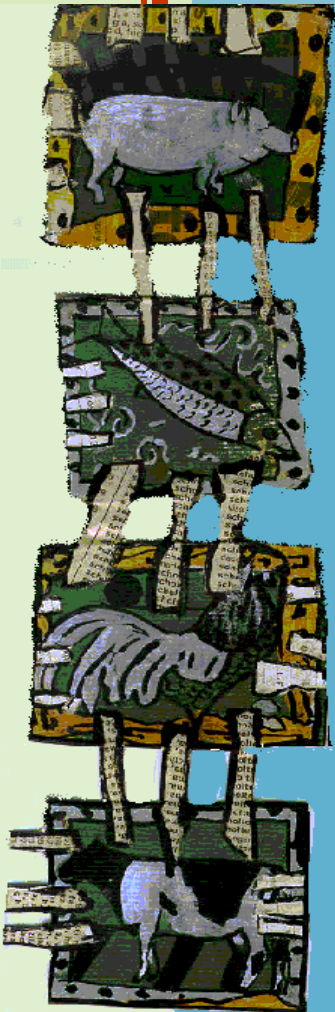
# Goal SEFABAR

Integration with socio economic case studies



Information material sustainable breeding and reproduction

- to improve awareness
- for policy makers



# Remarks

**EU-project is safe environment**  
for

*building dialogue and trust*  
*developing new concepts* } *technology/  
society*

**Socio-economic projects *about*  
industry should take place  
*with* industry**

