ETHICS AND ANIMAL FARMING
A Web-based interactive exercise for students using the Ethical Matrix

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The Ethical Matrix is an educational resource for students in schools and colleges on how to apply ethics to issues in animal farming. It consists of 3 sessions, including an interactive Web-based exercise.

This resource is designed for use in post-16 courses in biology, agriculture, environmental studies, animal science, food science and applied ethics. Introductory university level courses may also find it useful.

A GUIDE FOR TEACHERS AND LECTURERS
Produced by the University of Nottingham Centre for Applied Bioethics and published by Compassion in World Farming Trust
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Background information

The exercise aims to introduce students (post 16 years) to ethical dimensions of some modern agricultural practices involving animals, and to engage them in a rational decision-making process. It has been designed principally for use by biology students in secondary schools and colleges, but it may also be of value in introductory courses in bioethics at universities, where knowledge of bioethical issues is now often a specified requirement (e.g. as in the QAAHE benchmarks for bioscience degrees in UK). The basis of the approach adopted is a framework called the Ethical Matrix, which has been designed to assist students in:

- identifying ethical concerns
- examining information and opinions relevant to these concerns
- making considered judgements on these concerns, and
- through class discussion, comparing these judgements with the views of others.

1. External influences on science

The training of biology students, like that of other science students, encourages objectivity; and where there are disputes about knowledge claims it is natural to assume that they can be resolved by appeal to the ‘correct information’.

But acquaintance with the history of science reveals that scientific understanding is invariably conditioned by the cultural environment in which it is formulated (see Box 1). That is to say, science is greatly influenced by social, economic, political and cultural factors, which are external to the laboratory. Moreover, the fact that much scientific knowledge has a limited shelf-life shows that the conventional wisdom at any one time can only be an approximation to the truth.

It follows that a mature appreciation of biology takes into account the fact that scientific understanding is always provisional, and that a suitably sceptical attitude is the hallmark of the true scientist. Philosopher of science the late Sir Karl Popper regarded scepticism as the basis of scientific method, which he defined as “the method of bold conjectures and ingenious and strenuous efforts to refute them.”

Box 1: The social construction of biology

Every age constructs a model of the living world, built up from theories, and the social and political imagery of the day, that highlights or emphasises particular aspects of our understanding.

In the eighteenth century, an age of classification in botany and zoology, the emphasis was on harmony and systemic order. Nature was a catalogue of organic forms, each fashioned by an ingenious creator, each with a place on a Great Chain of Being that stretched from inanimate matter to God. The scientist’s task confronted by this majestic scheme, was to classify its elements, to contemplate the subtlety of the connections that held it together and reveal the harmonious functioning of particular parts.

In the nineteenth century, the picture changed with the idea of dynamic, evolutionary change, based on competition and struggle. ‘Nature red in tooth and claw’ was the image for a new age of rapid industrialisation, aggressive business practices, and intensifying struggles between capital and labour. Organisms were approached in a different light as the products, not of design, but of millennia of competition with other species, in which the better adapted eventually outbreed their competitors.

The dominant image of the second half of the twentieth century, deepened by insights of genetics, is less reverential than that of the eighteenth, and places less emphasis on competition and struggle than that of the nineteenth. Nature is a system of systems. Organisms function, reproduce and evolve as systems ordered by their genes, managed by the programme in their DNA. Life is the processing of information.


If biology as an academic discipline is so subject to the influence of external factors, it is inevitable that these play an even more significant role when we come to consider the applications of biology in fields such as agriculture, food science and nutrition. But, while it may be impossible (and, in fact, undesirable) for any of us to ignore the cultural circumstances in which we live and think, we can mitigate the effects of subjectivity by aiming to think rationally. So, the principal object of this teaching pack is to demonstrate that it is possible to think rationally about ethics as well as about science.

2. Curricular requirements

There are good educational reasons for introducing this type of thinking into the applied biology curriculum. As noted by Splitter and Sharp2: “Assuming that some ways of living are more worthwhile than others, and that we would all like to prepare our students to live worthwhile lives (but not to determine the course of those lives) it follows that a good part of education should be concerned with strengthening of judgement within a framework which encompasses reflection and deliberation.”

Box 2: Excerpts from A level Biology Syllabuses

AQA (Assessment and Qualifications Alliance) Biology B at AS and A level*

Spiritual, Moral, Ethical, Social, Cultural and Other Issues

17.1 The study of Biology lends itself to consideration of many spiritual, moral and cultural issues. The immense variety and complexity of living organisms ineluctably evoke awe and wonder, and candidates should be encouraged to appreciate and respect all forms of life. Consideration of the evidence for evolution and natural selection may lead candidates to reflect on ultimate questions relating to the origin and meaning of life. Many of the potential applications of biological understanding raise moral and ethical issues.

OCR (Oxford, Cambridge and RSA Examinations) Biology†

Specification Aim 2.1: Spiritual, Moral, Ethical, Social, Cultural and Other Issues

These specifications provide an opportunity for candidates to appreciate (inter alia): a sense of awe and wonder at the scale and impact of natural processes and phenomena; the place of mankind in the natural world; and the moral, ethical, social and cultural implications of some of the applications of biology and technology.

Assessment Objectives of AQA (6.1) and OCR (AO1) are couched in identical words:

Candidates should be able to: draw on existing knowledge to show understanding of the ethical, social, economic, environmental and technological implications and applications of biology.

* www.aqa.org.uk
† www.ocr.org.uk

The importance of introducing social and ethical dimensions of science to science students has been increasingly recognised in recent years, reflecting a wider appreciation of the need to explain and justify research and its technological consequences to a sceptical and apprehensive public. A number of examining boards now give credit to candidates demonstrating understanding of these issues (see Box 2).

3. What ethics is about

As shown in Box 2, ethics is often interpreted in a rather narrow way. For example, in discussions of the impacts of certain technological innovations it is not unusual to see these listed as ‘economic, safety, environmental and ethical.’ But the logic of that approach implies that it could be acceptable for us to countenance unethical economics, unethical safety and unethical environmental protection measures? So isolating ‘ethics’ in such a way risks limiting its significance to mere sentiment, irrationality or religious scruples.

The approach adopted here casts ethical issues in a much broader context, so that they become open to rational discussion. It draws on ethical theories which underpin widely accepted principles defining the right and the good.

4. Ethical principles

A sound starting point for thinking about ethics is to outline principles of what has been labelled the common morality. Despite the increasing diversity of modern multicultural, pluralistic societies, the pursuit of democracy makes certain assumptions that conform to the idea of the common morality. These assumptions are encapsulated by three prima facie principles, namely, respect for:

- wellbeing
- autonomy
- justice

Appeal to these principles does not determine the outcome of ethical reasoning, but examining issues in their light ensures that attention is paid to a range of ethically relevant issues, that there is a consistency of approach, and that any decisions made are explicit and can be verified (or challenged). The principles are based on established ethical theories that commonly feature in perceptions of ‘rightful actions’ (see Box 3).

Box 3: Background Ethical Theory

- Respect for wellbeing corresponds to issues prominent in utilitarian theory, which characteristically employs a form of cost/benefit analysis to decide on what it is right to do. Most famously articulated in the eighteenth and nineteenth centuries by Jeremy Bentham and John Stuart Mill, it may be summarised as aiming for ‘The greatest good for the greatest number’. While this might seem a worthy objective, naïve forms of utilitarianism suffer from several defects e.g.:
  - They depend on predictions of outcome (which might be wrong) and (fallible) assessments of who or what counts in the cost/benefit analyses
  - They can be held to justify gross inequality (as long as the majority ‘are happy’) or even crime (stolen money distributed to the needy)
  - Goods and harms are often incommensurable (how can we weigh the safety of a new hair shampoo against the suffering of animals used to test it?)

- Respect for autonomy corresponds to the notion of rights advanced in the eighteenth century by Immanuel Kant, which appeals to our responsibilities and duties to ‘treat others as ends in themselves’: in essence, the Golden Rule: ‘Do as you would be done by’. For Kant, ethics was about respecting others as individuals, not calculating costs and benefits (i.e. in contrast to utilitarianism, it applies irrespective of outcome).
  - A major defect of this approach taken in isolation is that there is no rule by which to decide how to prioritise duties, e.g. the duties to protect others from harm and to tell the truth - if, as may happen, telling the truth is a cause of harm.

- Respect for justice corresponds to Rawls’ notion of justice as fairness. For John Rawls (a US philosopher who died in 2003): “Justice is the first virtue of social institutions, as truth is of systems of thought. A theory, however elegant and economical, must be rejected or revised if it is untrue; likewise laws and institutions, no matter how efficient or well arranged, must be reformed or abolished if they are unjust”.*
  - However, there is a problem in defining what fairness means: e.g. does it mean that goods should be distributed according to need, or ability, or effort?

In practice, all these theories are likely to contribute, to varying degrees, to people’s attitudes on what should be done in specific circumstances. It seems unlikely that anyone could consistently act as an out-and-out utilitarian; or as an out-and-out Kantian. Instead, each of us blends these theories (consciously or unconsciously) with intuitive responses, and subject to cultural influences, to achieve what has been termed a ‘reflective equilibrium’.


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3 These principles are derived from those introduced for addressing ethical dilemmas in medical practice by Beauchamp T L and Childress J F (1994) Principles of Biomedical Ethics vol.4 New York: Oxford University Press. They were adapted to issues in food and agriculture by Mepham B (1997) in Food Ethics ed Mepham B. London: Routledge, pp. 101-119
5. The significance of the ethical principles

It is important to challenge the view that ethics is simply a matter of opinion and therefore carries little weight by comparison with the objective reality of scientific knowledge. The more we examine this alleged distinction the less valid it appears. Surely, we would all agree that we suffer wrongs if:

- violently attacked (a violation of our wellbeing)
- wantonly deprived of our liberty (an infringement of our autonomy)
- convicted of a crime of which we were innocent (a miscarriage of justice)

These wrongs are not mere matters of opinion – they are based on bedrock principles, which matter profoundly to us as individuals. And if they matter to us, individually, they also matter to others. Of course, some extreme examples are cited above, but we are rightly concerned about lesser infringements of the principles. On the other hand, scientific knowledge, for all its undoubted significance and value, changes constantly: few scientific theories have not undergone important revision in, say, the last fifty years. Moreover, science is by no means value free. For example, killing an animal for an exercise in dissection implies placing higher value on the knowledge to be gained than on respecting the animal’s right to live.

6. The Ethical Matrix

In this exercise the issues raised are explored by applying the ethical principles listed above to the interests of four groups, namely:

- Farmers (in this case, livestock and fish farmers)
- Consumers (all of us, both literally as food consumers and as participants in democratic society)
- Farm animals (including farmed fish)
- The Environment: encompassing domesticated and wild species considered collectively, as interrelated species, breeds and populations

Because the technical terms wellbeing, autonomy and justice may seem daunting to many students, they are renamed wellbeing, choice and fairness, respectively, in the web exercise. The latter three terms do not accurately represent the full meaning of the first three, but they serve as an acceptable approximation in terms of encouraging ethical reflection.

As the three principles and four interest groups interact, the resulting twelve ethical impacts can be represented in the form of a table (called the Ethical Matrix) which aims to facilitate discussion of the issues by arranging them in a rational structure (see Table 1). The translations of the abstract principles are expressed in terms which are intended to be familiar but at the same time authentic from an ethical perspective. For example, respect for fairness for farmers is translated as ‘fair trade rules’, while that for consumers’ choice is interpreted in terms of ‘choice’ (referring to the ability to choose which types of food to consume) and democracy (referring to the types of animal agriculture that society considers acceptable).

It is important to appreciate that the interpretations of the principles in the cells (Table 1) set criteria which would be met if the principles concerned were respected by a proposed action. It is, of course, recognized that this is a tall order. It is probable that very few, if any, decisions people might reach using the Matrix could afford equal respect to all the ethical principles, so that some may need to be overridden by others, or respect for some only partially discharged. However, by specifying these ethical standards the extent to which a system approaches, or falls short of, acceptability is made apparent.
Table 1: The Ethical Matrix showing, in twelve individual cells, the interpretation of respect for the principles of wellbeing, choice and fairness in terms appropriate to the interests of farmers, consumers, farm animals and the environment, respectively. For the first two interest groups both impacts and responsibilities are involved, whereas for farm animals and the environment (shaded) only impacts of human actions are relevant.

Many of the translations of the principles will be self-evident but some require further explanation. For example, respect for the intrinsic value of animals is taken to represent fair treatment of farm animals, extending to them the notion of rights, which are universally accepted for other people. Few would consider respect for animal rights carries the same weight as that for humans, but for many people the concept is closely parallel. Of course, in using the Matrix people are free to accord as much or as little significance to respect for this principle (as for all the others) as conscience allows.

Translations of the principles in terms of respect for the environment are perhaps the most problematical. Conservation is the most logical, but is it reasonable to translate ‘choice’ as biodiversity? The rationale is that many people consider that the natural evolutionary processes of the ecosystem correspond to its autonomous action, while sustainability encapsulates the notion of long term fairness for the biosphere. These are attempts to capture our ethical duties to the world around us within a framework which seems highly satisfactory for humans and animals: and, of course, when referring to the environment we are talking about living beings on a collective scale. Perhaps the bottom line is that all three principles specified for the environment have undoubted significance and need to feature in any ethical framework to be used.

7. The value and limits of the Matrix

Not surprisingly, these sometimes rather imaginative interpretations are open to challenge and debate. However, the value of the approach has been confirmed in several exercises in public participation, at which people have written comments on the Matrix such as:

- “it identifies issues and focuses debate”
- “very good vehicle for education/discussion, teasing out issues and peoples’ feelings”
- “enables a wide range of issues to be discussed”
- “aids the decision making process”

But it would be a mistake to imagine that one can resolve complex ethical issues simply by consigning their elements to the separate ‘cells’ of the Matrix. At its simplest, the Matrix is merely a check-list of concerns, which happens to be based on ethical theory. But it can also serve as a means of promoting students’ awareness and stimulating rational ethical deliberation and debate. The necessity to consider how the interests of different groups

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interact as parts of the whole enterprise can only have beneficial effects. Even so, it is important to appreciate that the Matrix is just a framework – it identifies issues and poses questions, but it does not provide answers.

It is, of course, impossible here to discuss the full significance of the approach but it has been described in several other publications and has also been employed by ethicists in other countries. Appendix 1 provides further details of the Matrix.

8. Using the Matrix as a guide to ethical assessment

Many ethical issues can be encapsulated in the replies demanded of a single question; “How much should my interests take precedence over your interests?” But there are, of course, many parallel questions, such as “How much should one nation’s interests take precedence over those of other nations?” and “How much should human interests take precedence over those of farm animals?”

So, ethics in its full scope aims at care of others; and while only certain occupations are conventionally classed as caring professions it is implicit in the remit of ethics that, for everyone, care should be exercised in relation to others (necessarily, but not exclusively, humans). If someone was not prepared to admit to caring about anyone or anything other than him or herself, it would be impossible for them to use the Ethical Matrix. But even if they were to express concerns for only one cell of the Matrix, say, respect for satisfactory income or respect for animal welfare, that revelation would starkly expose the value system determining their actions. In fact, experience shows that most people do ascribe some value to all cells of the Matrix, although the degree of value ascribed varies both with the individual and with the issues being discussed.

To be effective, ‘caring’ involves empathy, an attempt to gain an imaginative conception of others’ predicaments. Bizarre as it may seem to ‘imagine what it is like to be a broiler chicken’ (although there is now much scientific evidence to add substance to our imaginative conceptions), genuine ethical insight is only likely to emerge from attempts to empathise in this way.

9. The two stage process involved in using the Matrix

A two-stage process is involved.

- First, application of the ethical principles to the different interest groups aims to encourage an attitude of care, in which we place ourselves in others’ shoes to assess their situation. While not too difficult for other human groups, this demands a degree of imaginative insight for farm animals, and may seem to become highly abstract in the case of the environment. Even so, in the latter case, not only are sentient beings often involved but we are also considering matters that impact directly on present-day and future human life. The essential point is that, since the interests of members of all these groups are claimed, by some people at least, to be important, the Matrix provides a structure for giving those interests due attention.

- The second stage entails examining the different assessments and weighing them to decide how they should affect our overall judgements. For example, most people consider it right to put human interests above those of animals but they rarely put all human interests, however minor, above all animal interests. Nor does, say, farmers’ profitability necessarily take precedence over fair trade or environmental biodiversity. The Matrix seeks to encourage rational decision-making by making explicit the ethical concerns for each interest group, and showing how they have been weighed.

10. Using the interactive exercise on the Web

In the interactive exercise on the Web, students will be given the opportunity to compare three systems of livestock production with a baseline system, organic farming, which is generally regarded as representing a humane but more expensive form of livestock farming. The overall judgements made on particular systems, based on each student’s scoring for the different cells of the Matrix, are revealed by their answers to a series of questions which will indicate how they weigh the different impacts. The students’ individual responses can be printed – allowing the calculation of class averages - and providing a useful basis for subsequent class discussion.

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Notes on the three sessions

Session 1
THE LESSONS OF BSE: DISCUSSION GROUPS

1. Aim
The aim of this session is to prepare students for using the web exercise on the Ethical Matrix in the session 2. This session consists of a combination of:

- formal instruction
- individual paper and pencil responses and
- small (buzz) group discussions

2. Process
There are three stages, each about 15 minutes long.

Stage 1
The object of this teacher/lecturer-led stage is to encourage students to adopt a questioning, if not sceptical, attitude. This is seen as a pre-requisite for philosophical reflection, itself a requirement for ethical reasoning.

A useful trigger for discussion is the Government’s handling of the BSE outbreak in cattle in the 1990s, which is likely to be familiar to most students resident in the UK at the time (and most overseas students). Students should be reminded that on 20.3.96, the then Minister of Health, Stephen Dorrell, announced to the House of Commons that the most likely cause of the ten cases of new variant CJD in humans (a fatal, incurable neurological disease) was consumption of beef infected with BSE. This followed many years of assertions that British beef was safe to eat because there was ‘no evidence that BSE was passed to humans.’

This example of the limitations of scientific advice can be used to explore:

- the reliability
- the boundaries

of scientists’ opinions on novel technologies and procedures affecting agricultural practice and food standards.

Students could be asked to write down ideas on the above two criteria (encouraging a period of quiet reflection) and then asked to share them with the class. The most likely outcome (which the teacher/lecturer might supplement as necessary) is a range of opinions offered by students on the role of scientists, technologists and the lay public in influencing Government decisions. These might be listed on a board/OHP/flip chart.

Essentially, these opinions will reflect differing ethical positions, in that they will refer (if only implicitly) to respect for people’s (and animals’) welfare, people’s right to know, their choice, issues of justice etc. There is opportunity here to indicate the pluralism inherent in democratic society, and the challenges this raises.

“...The contestable nature of moral issues is due, partly to the constantly changing socio-cultural context which forms the backdrop of ethical enquiry, partly to the different values and perspectives from which individuals involved in ethical disputation tend to work, and partly due to a lack of consensus over the meaning and status of ethical concepts. Accordingly, a student-driven ethical enquiry will reveal how questions of value are sensitive to context, circumstance and differences of perspective.”

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7 A full report of the BSE Inquiry (Phillips Report) is available at: www.bseinquiry.gov.uk
8 Splitter and Sharp (1995) see note 2
Stage 2
For this stage, students are allocated to buzz groups (4-6 students per group) to discuss the procedure for addressing issues of this nature. If the class is mixed it is a good idea to try to ensure that both genders are roughly evenly represented in each buzz group because there are often marked gender differences in attitude to scientific matters.9

The main prompt is to consider how a government advisory committee would tackle these questions. So issues to be discussed are its composition, remit and ultimate influence on policy decisions. But it is important for the students to think broadly. Thus, in the case of advising the Government of the day on BSE, account would need to be taken of consumers (e.g. health, choice of food, food prices), farmers (income, feed costs), farm animals (welfare), the environment (pollution from incineration of carcases) etc.

"...to think about environmental issues is to involve oneself in an enquiry into concepts (like care, responsibility, animal rights and sustainable development) and strategies (like identifying consequences, imagining alternative possibilities, seeing specific phenomena as parts of a larger whole or means to a worthwhile end, and taking everything into account) that are both ethical and contestable."10

Stage 3
This stage is largely formal instruction. It seeks to build on the students’ collectively expressed ideas to propose a framework for dealing with complex issues involving farm animals, food and the environment. Because these issues have wide ranging effects, decisions which need to be made about them are often the responsibility of Governments, and such decisions are typically reflected in laws, regulations and codes of practice. But in democratic societies it is important for all citizens to understand the issues and make a contribution to the debate, and perhaps those with specialised training in this field might be said to have additional responsibilities in this respect. The latter point might be stressed with the students.

It should be indicated that, over the years, philosophers have thought deeply about the meaning of ideas like right and good (going back 2500 years in the cases of Plato and Aristotle) but that there are no simple rules for reaching the right answer to ethical questions.

However, this does not mean that ethics is a purely personal matter. In fact, within society there is much agreement about many ethical principles – which describe the ways in which we should, and should not, treat others. Taken together, these commonly accepted principles constitute what has been termed the common morality.

So in trying to decide how to regulate new technologies and practices in the agricultural and food industries, a good starting point is to consider these principles, and how they might influence decision-making. In addition to representing commonly accepted opinions in society, another reason for basing decisions on agreed principles is to demonstrate how decisions have been reached. The decision-making process must be both rational and transparent.

Three important principles are respect for:

- wellbeing
- choice
- fairness

Students might be asked to give examples of how these principles can be respected and infringed in people’s treatment of other people.

10 Splitter and Sharp (1995) see note 2
It should then be suggested that these ethical principles can also be applied to other interest groups, such as animals and the environment (which is inhabited by living animals and plants). If we apply the 3 principles to a range of such groups we arrive at:

- the Ethical Matrix (see Table 1, p5), which helps us to examine what effects agricultural and food practices might have on a wide range of individuals (human and non-human). Some time can be spent considering the Matrix, perhaps on an OHP. An explanation of the translation of the different principles for different interest groups might be necessary. However, detailed examination is probably undesirable at this stage because students will learn more about the Matrix when they come to use it in Session 2.

**Session 2**

**USING THE WEB EXERCISE**

The early part of the exercise introduces some general concepts, recapitulating and developing material presented in Session 1.

In the interactive stage students can choose one of three options, which involve assessing the ethical impacts of different intensive animal production systems by comparison with the corresponding organic systems. Teachers/lecturers may prefer to limit the choice so that students all have the same experience in using the exercise, thus facilitating subsequent group discussion in Session 3.

The three options are:

- Pig production
- Poultry (chicken) production
- Fish farming: farmed salmon

Students will score their assessment of ethical impacts, and then make judgements on the acceptability of the system concerned (see Section 10 of Background Information above, p6).

**Session 3**

**MATRIX RESULTS: CLASS DISCUSSION**

Each student will be able to print out their scoring and responses to the judgement questions. Making copies for the teacher/lecturer will allow presentation of:

- average class scores for each of the 12 cells of the Matrix, for each of the systems chosen
- comparison of individual responses (anonymously if desired) with others and with the class averages
- examination of how different judgements on the systems are justified by different scores awarded for the individual cells

The data are amenable to statistical analysis.

The results of such a study should provide ample material for a 50 minute class discussion. All data in such exercises have some significance, e.g. don’t knows may reveal the reason for negative attitudes if a precautionary stance is adopted. On the other hand, some judgements may appear too dogmatic in view of scoring recorded. The anonymity of the data may allow a more rational discussion of issues than might occur in open expression of opinions.
References

References are listed below for the majority of the claims made for each of the six systems in the web exercise - the three organic and the corresponding three intensive. The references provide documentary evidence for the claims made, and serve as a source of information for those wishing to pursue the analysis more deeply.

PIG PRODUCTION FARMERS

Organic - Income (I) / Workplace (W)
1. No reference
2. No reference

Intensive - Income (I) / Workplace (W)
4. No reference
6. see Note 3b

Organic - Managerial Freedom

Intensive - Managerial Freedom

Organic - Fair Trade Rules

Intensive - Fair Trade Rules
11. see Note 9

CONSUMERS

Organic - Safety and Quality
14. see Note 3a

Intensive - Safety and Quality

Organic - Choice / Democracy
19. see Note 7

Intensive - Choice / Democracy
Organic - Affordability

Intensive - Affordability
23. No reference
24. see Note 22

PIGS
Organic - Animal Welfare
26. see Note 3a
27. see Note 25

Intensive - Animal Welfare
31. see Note 29a
32. see Note 30

Organic - Behavioural Freedom
33. see Note 25
34. see Note 30

Intensive - Behavioural Freedom
35. see Note 30
36. see Note 30

Organic - Intrinsic Value
37b. (2nd sentence) see Note 21

Intensive - Intrinsic Value
38. see Note 21

ENVIRONMENT
Organic - Conservation
39. see Note 21

Intensive - Conservation
42. see Note 5

Organic - Biodiversity
43. see Note 7
45. see Note 44

Intensive - Biodiversity
47. see Note 44
Organic - Sustainability
48. see Note 40a
49. see Note 7

Intensive - Sustainability
51. see Note 5
52. see Note 18a

POULTRY PRODUCTION FARMERS

Organic - Income (I) / Workplace (W)
1. No reference
2. No reference

Intensive - Income (I) / Workplace (W)
4. No reference
6. see Note 3b

Organic - Managerial Freedom

Intensive - Managerial Freedom

Organic - Fair Trade Rules

Intensive - Fair Trade Rules
11. see Note 9

CONSUMERS

Organic - Safety and Quality
14. see Note 3a
15a. (1st sentence) see Note 13

Intensive - Safety and Quality

Organic - Choice / Democracy
19. see Note 7

Intensive - Choice / Democracy

Organic - Affordability

**Intensive - Affordability**

23. No reference
24. see Note 22

**CHICKENS**

**Organic - Animal Welfare**

26. see Note 3a
27. see Note 25

**Intensive - Animal Welfare**

30. see Note 28

**Organic - Behavioural Freedom**

31. see Note 25
32. see Note 25

**Intensive - Behavioural Freedom**

34. see Note 28

**Organic - Intrinsic Value**

35b. (2nd sentence) see Note 21

**Intensive - Intrinsic Value**

36a. (1st sentence) see Note 28
36b. (2nd sentence) see Note 21

**ENVIRONMENT**

**Organic - Conservation**

37a. (1st sentence) see Note 21
   www.new-agri.co.uk/01-1/pov.html
   www.soilassociation.org/sa/saweb.nsf/Library

**Intensive - Conservation**

40. see Note 5

**Organic - Biodiversity**

41. see Note 7
43. see Note 42

**Intensive - Biodiversity**

45. see Note 42

**Organic - Sustainability**

47. see Note 7

**Intensive - Sustainability**

49. see Note 5
50. see Note 18a
SALMON FARMING

FARMERS

Organic - Income (I) / Workplace (W)

Intensive - Income (I) / Workplace (W)
4. No reference
6. see Note 3
7a. (1st sentence) see Note 3

Organic - Managerial Freedom
8. see Note 2

Intensive - Managerial Freedom

Organic - Fair Trade Rules

Intensive - Fair Trade Rules
11. see Note 1

CONSUMERS

Organic - Safety and Quality
12. see Note 5
14. see Note 13
15. see Note 13

Intensive - Safety and Quality
16. see Note 5

Organic - Choice / Democracy

Intensive - Choice / Democracy

Organic - Affordability

Intensive - Affordability
23. No reference

SALMON

Organic - Animal Welfare
25. see Note 13
26. see Note 19
28. see Note 13

Intensive - Animal Welfare
30. see Note 17
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Organic - Behavioural Freedom
33. see Note 13
34. see Note 19
35. see Note 13

Intensive - Behavioural Freedom
36. see Note 31
37. see Note 17

Organic - Intrinsic Value
38b. (2nd sentence) see Note 13
39. see Note 13

Intensive - Intrinsic Value

ENVIRONMENT

Organic - Conservation
42. see Note 13
43. see Note 13

Intensive - Conservation
45. see Note 17

Organic - Biodiversity
46. see Note 13
47. No reference

Intensive - Biodiversity
48. see Note 5
50. see Note 29

Organic - Sustainability

Intensive - Sustainability
54a. (1st sentence) see Note 29
54b. (2nd sentence) see Note 5
55. see Note 31

Intensive - Conservation
42. see Note 5

Organic - Biodiversity
43. see Note 7
45. see Note 44

Intensive - Biodiversity
47. see Note 44

Organic - Sustainability
48. see Note 40a
49. see Note 7

Intensive - Sustainability
APPENDIX 1

More on the principles used in the Matrix

Wellbeing

- Respect for this principle means that we care about others’ wellbeing – we are concerned that they are healthy, both physically and mentally, and are not exposed to dangers that would affect these
- The principle obviously applies to people, e.g. concerning their freedom from disease, danger and poverty
- But it can also apply to animals, who can be harmed, and to the environment, which can be polluted or eroded

Choice

- Respect for this principle is about being able to act freely according to our reasonable preferences. For example, choice is undermined if we are not allowed to mix freely with our friends of a different ethnic group or practise our religion
- Animals’ choice is affected if they are prevented from behaving according to their natural instincts, e.g. if kept in cages or tethered
- The natural way different plants and animals interact in the ecosystem is ensured when their biodiversity is respected, allowing what amounts to ecological choices

Fairness

- Respect for this principle is easy to understand when considering people. For some people to be born into rich families and others poor, or to have access to education when others do not, are examples of unfairness which civilized countries try to compensate for. To be convicted of a crime you didn’t commit is not just unfair, it is unjust
- Some people suggest animals are treated unfairly if they are used merely as objects (instrumentally) rather than respected as other sentient beings
- Similarly, we can be said to be unfair to the environment (which includes all plants and animals – including people – now and in future) if its continued healthy existence is risked

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APPENDIX 2

More on the translations of the ethical principles used in the Matrix

**FW = Satisfactory income/workplace**
This refers to satisfactory incomes and working conditions of farmers and farm workers. The word ‘satisfactory’ is debatable, but is preferable to ‘adequate’, which might imply merely satisfying bare necessities. (Associated industries, such as feed merchants, and retailers and associated industries are omitted for simplicity, being included in the consumers interest group.)

**FC = Managerial freedom**
This entails allowing farmers to use their skills and judgements in making managerial decisions.

**FF = Fair trade**
This means ensuring farmers get fair prices and are not unfairly treated by international trade laws.

**CW = Safety and quality**
This means protecting consumers from food poisoning, unhealthy food (e.g. with a high content of saturated fat) and providing a good quality of life for citizens through a healthy agri-food industry.

**CC = Choice/democracy**
This refers to a good choice of foods, adequate labelling and sufficient knowledge to make sensible food choices. It also includes democratic choice, e.g. allowing people to decide whether they want GM foods grown in the country.

**CF = Affordability**
This means that there should be an adequate supply of affordable food. No one should go without enough food because too poor to buy it.

**AW = Animal welfare**
This refers to preventing animal suffering, improving their health and avoiding risks.

**AC = Behavioural freedom**
This entails ensuring that animal can express their behavioural instincts to a satisfactory degree, and, in particular, are not permanently caged or tethered.

**AF = Intrinsic value**
This means ensuring animals are treated in ways that respect them as sentient beings, and not as things (so-called, instrumental use).

**EW = Conservation**
This principle aims to prevent pollution, and put it right when it has been caused.

**EC = Biodiversity**
This is about protecting the variety of animal and plant species, and preserving rare breeds.

**EF = Sustainability**
This principle involves preserving life-supporting resources, such as soil and water, and using both non-renewables (like fossil fuels) and renewables (like wood) in a responsible way. It also involves cutting greenhouse gas emissions.
APPENDIX 3

More on the Matrix and ethical judgements

- Most practices used in agriculture have many effects – on farmers, retailers, consumers and the environment.
- Some are direct effects (food prices may go up or down; or animal welfare can be made better or worse). But some are knock-on effects: e.g. farmers who can’t compete effectively are forced to leave the business, and eventually villages tend to be bought up by commuters.
- The Matrix is a framework for recording and thinking about these effects in terms of values – things that matter.
- But the Matrix does not give answers. What you get out depends on what you put in, and how you rank the different interests.
- For most people, all three principles play some part in judging whether we think something is ethically acceptable or not, and how it should be regulated.
- So if we are going to reach a reasoned decision that we can explain to other people, we need to weigh up how important the different principles are in any particular case.
- You cannot prove an ethical judgement but you can explain it by showing how you arrived at it.
- This process can be time-consuming, and sometimes means being prepared to change your mind.
Further details of the animal welfare issues raised in the Ethical Matrix can be found in the following publications available from CIWF Trust

www.ciwf.org

- Stop-Look-Listen: recognising the sentience of farm animals (2003)
- Europe’s Long Distance Transport of Live Animals (2003)
- Laid Bare...the case against enriched cages in Europe (2002)
- The Detrimental Impacts of Industrial Animal Agriculture (2002)
- The Gene and the Stable Door: biotechnology and farm animals (2002)
- Chicken - how come it's so cheap? (2002)
- In Too Deep - the welfare of intensively farmed fish (2002)
- The Case against the Veal Crate (2001)
- Brittle Bones: Osteoporosis and the Battery Cage (1999)
- "For Their Own Good": a study of farm animal mutilations (1994)

- Le Bien-Etre des Poulets de Chair dans L’Union Européene (2003)
- Los Efectos Devastadores de la Producción Industrial de Animales de Granja (2002)
- OMC: Un Sérieux Danger pour la Protection des Animaux
- OMC: La Mayor Amenaza Actual para la Protección de los Animales
Materials for secondary and college courses

CIWF Trust produces educational materials designed to help teachers and students approach ethical issues in the human use of farm animals. These include factual information on animal farming, farm animal behaviour, the welfare aspects of farm animal breeding, resource use and pollution, social and economic implications and relevant ethical principles. Our latest materials include:

- **Farm Animals & Us:** video and Teacher’s Pack, including lesson plans, factual information and discussion exercises, targeted for the KS 3-4 Science Curriculum

- **Farm Animals & Us 2 - feeding the world without cruelty to animals:** video designed for 16+ life sciences, geography or citizenship

- **Intensive Farming of Animals:** 24-page illustrated student booklet, including welfare of pigs, poultry and dairy cows, with sections on selective breeding and organic farming

- **Animal sentience website - www.animalsentience.com.** Includes definitions and examples from animals at home, in the wild and on farm, plus discussion forum, feature articles, literature and film section

- **Citizenship resource - Campaigning for Farm Animals.** Student booklet and teacher’s guide, designed for KS 3-4 Citizenship Curriculum but also useful for older students. Includes factual information and activities on animal farming and on political campaigning for farm animal protection at UK, EU and global level

- **Genetic Engineering and Cloning of Farm Animals:** video and activity pack designed for 16+ biology courses but includes useful discussion material for other subject areas

Further details and materials available from:

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ETHICS AND ANIMAL FARMING
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A GUIDE FOR TEACHERS AND LECTURERS

The Ethical Matrix resource comprises

- Web-based exercise
- Guide for Teachers and Lecturers
- Students’ Guide

Resource written and produced by Professor Ben Mepham and Sandra Tomkins
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