

Intensive Farming and the Welfare of Farm Animals

Each year 50 billion animals are slaughtered for their meat, to feed a world population of 6 billion people. 44 billion of these are meat chickens (called broilers). Most live in huge flocks in crowded sheds.

In addition, more than 5 billion hens are kept to lay eggs. Most of these live in battery cages. Over a billion pigs are reared for pork, bacon or ham. Many of them are kept in crowded or confined environments.

This booklet describes intensive farming methods designed to produce meat, milk and eggs economically. It addresses the paradox that cheap food policies can be very costly to society as a whole, threatening rural employment, human health, the environment and animal welfare. It shows alternative systems, such as free-range and organic, which can maintain livelihoods for small farmers, be environmentally sustainable and meet more of the needs of farm animals.

This booklet starts by examining the welfare consequences of intensive factory farming systems.

Animals slaughtered for meat	World Production	EU Production	UK Production
Chickens	44.5 billion	4 billion	800 million
Turkeys	650 million	210 million	26 million
Ducks	2 billion	110 million	20 million
Geese	500 million	2.5 million	1 million
Pigs	1.1 billion	190 million	14 million
Sheep	500 million	70 million	19 million
Cattle	280 million	8 million	900,000
Goats	300 million	8 million	21,000
Rabbits	750 million	not available	not available
Horses, donkeys and mules	7 million	217,000	2,100
Camels	1 million	-	-

Table of animals slaughtered for food annually (Source FAOSTAT)



Sow in intensive system



Broiler chicken – 44 billion raised annually

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Key aspects of industrial animal agriculture

Animal farming throughout the world has become increasingly intensive. This is partly a response to demand from consumers for cheaper meat, milk and eggs and to the pressure on farmers from supermarkets for cheaper produce.

Intensive farming can involve:

- crowding animals closer together
- keeping them in larger groups
- confining them in cages
- using hormones to increase production (illegal in the EU, but widely used elsewhere)
- using antibiotics to promote faster growth and control the diseases that can spread in crowded conditions
- selectively breeding animals to grow faster or produce more milk or eggs. In future it may also involve genetic engineering and cloning

Battery hens



Crowding

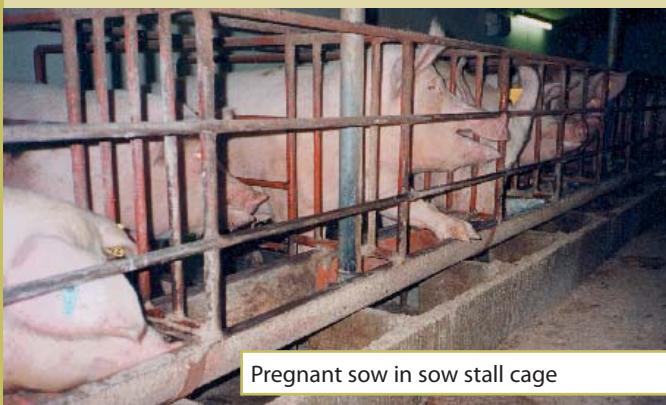
Fattening pigs



Broiler shed



Crowding animals together means that the farm can produce more of them. The animals need less energy to keep warm. However, crowding can cause stress, restrict their movement, result in over-heating in summer and lead to a build-up of ammonia pollution from their droppings.

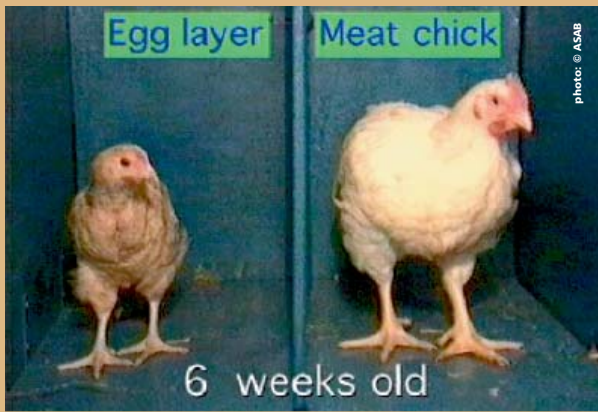


Pregnant sow in sow stall cage

Confinement

Crowded animals are more likely to fight. Confinement can reduce or prevent this. Animals will use less energy exercising, reducing feed requirements. However, it prevents animals from fulfilling many of their natural instincts. Is this a life worth living?

In the US, factory farms are often referred to as CAFOs - Confined Animal Feeding Operations.



At six weeks the meat chicken has reached its slaughter weight

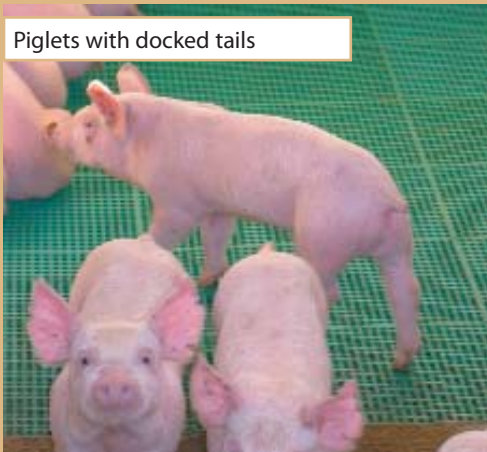
Selective breeding

Meat chickens have been selectively bred to grow twice as fast as egg-layers. This means that the farm can produce more batches of them per year. They live shorter lives, so use less energy living and maintaining themselves. However, they grow so fast that their legs may not keep up. They can suffer painful lameness, and up to 2% may be unable to stand at all. Heart disease is common, even in six-week-old birds. Is it right for chickens to suffer pain or to live shorter lives to make meat cheaper?



Genetic engineering and cloning

Experiments have been conducted on new technologies such as genetic engineering and cloning. In future these may be used for agriculture as well as for medicine. Large numbers of animals have to be experimented on to develop the technology. The Beltsville pigs, genetically engineered with growth hormone genes from other animals such as cattle, suffered from a range of disabilities and painful conditions such as ulcers. Dolly the cloned sheep suffered from arthritis, and none of her siblings survived.



Mutilations

Chickens, stressed by crowding, peck each other more. Cutting off the tip of the beak discourages this by making it painful to peck. Stressed and bored piglets are more likely to bite each other's tails. Chopping off the tips of their tails can help to reduce tail-biting. Is it acceptable to mutilate animals to prevent them from hurting or even killing each other?

Piglets which are kept in a richer environment are less likely to bite each other's tails. Enriching the environment can also reduce feather pecking in hens.



Keeping animals in large groups

Keeping chickens in very large groups makes egg and meat production more economic. Naturally they would live in groups of a dozen or so, each would recognise each other and the group would form a stable pecking order. Keeping birds in very large groups can increase stress.

DISCUSSION

How far does the demand for cheap food justify practices such as these?

To live like a pig in an intensive environment

In the world's most intensive systems, sows (female pigs) spend their pregnancies in sow stalls. Individually caged, they are unable to turn around. When they are about to give birth, they are transferred to farrowing crates. These are equally restrictive. At only three to four weeks old, the piglets are removed from their mother and transferred to pens with concrete or slatted floors. Meanwhile, their mother is impregnated again and the cycle continues . . .



Sow stall cage

In a natural environment, sows would spend 6-8 hours per day foraging for food. In these cages, they may only get one meal per day. They can suffer both from hunger and a lack of natural activity.

Some US pig farms are huge. In some, as many as a million sows are kept in "gestation crates" such as this.

Alternative systems are not necessarily much more expensive. In Europe it has been estimated that pigmeat from systems which keep the sows in groups costs 2p more per kilo to produce. Since the average UK consumer eats 21-22 kg of pigmeat per year, dispensing with sow stalls only costs 50p per person per year. This is less than one US dollar.

The sow stall is banned in the UK. Both the sow stall and the farrowing crate are banned in Sweden. The sow stall is to be banned in Finland, the Netherlands, Denmark, the Philippines and Florida. It will be banned throughout the EU from 2013, except for the first four weeks of pregnancy.

However, all these countries import pork, bacon and ham from countries that use the sow stall system. Free-trade rules prevent import bans (see p17).

A sow in a stall cannot turn around



She can lie down,



stand up,



and sit up.



She can look forward to a meal



and take part in limited social interaction.



To occupy the months of confinement, she can gnaw at the bars.

The life-cycle of intensively reared pigs

The sow stall cage (gestation crate)



These are pregnant sows. They will spend the length of their sixteen-week pregnancy in these cages. Their bed is a hard concrete floor. They can stand up, lie down or sit, but exercise is restricted to a few centimetres forwards or backwards. To begin with they make periodic attempts to escape from their imprisonment. In time, they end up chewing the bars either in an attempt to satisfy their instinctive drive to forage or in their desperation to find something to do.

A week before giving birth, the sow is transferred to the farrowing crate.

The farrowing crate



The farrowing crate is designed to prevent the sow from lying on her piglets. It does so at the cost of completely restricting the sow's movement. As in the sow stall, she can only stand up, lie down or sit. Her piglets can get to her when they want, but she cannot get to them. Nor can she get away for a bit of peace from their frequent attentions. Before she gives birth, the sow has a powerful instinctive need to build a nest. The crate frustrates this need.

Other less restrictive systems have been developed to reduce piglet mortality. Some outdoor breeding systems achieve an even lower piglet death-rate than the farrowing crate.

Aged only 4 weeks, the piglets are removed from their mother and fattened for pork, bacon or ham.

Fattening pigs



Stress at the early removal from their mother can weaken their immune systems, and some factory farming systems depend on the routine use of antibiotics to keep the animals well. Boredom from living in a barren environment can increase fighting and tail-biting. The tips of these piglets' tails were cut off shortly after birth to reduce the risk of tail-biting. Fattening pigs can also suffer from crowded and unhygienic conditions.

Meanwhile, their mother becomes pregnant again and returns to a crate.

To live like a pig in a natural environment

Pigs are woodland animals, descended from the wild boar. Even when fed full rations of commercial feed, free-range pigs will spend 6-8 hours each day foraging for food. Pigs would naturally live in small family groups of mothers with their female offspring.



When a sow is about to give birth, she finds a secluded space and builds a large nest for her piglets. When they are about three weeks old, the piglets follow the sow to join the main family group. The piglets will suckle from their mother for 13-17 weeks before weaning. Some of the female piglets may remain in the same family group to breed.

Wild boar sows would usually have a single litter of about six piglets each year, though they can have more. Intensively kept pigs have more than two litters of 10 or more piglets each year.

Pigs like to



graze,



browse,



root,



dig,



wallow



and socialise.

Intensive systems can thwart the natural behaviours of pigs

Nesting instincts

photo: © Marek Spinka



photo: © Marek Spinka



Just before she gives birth, a sow has a strong urge to build a nest to protect her young. In farrowing crates, sows usually have no material to build a nest, but they still try to go through nest-building behaviours. The frustration and stress caused don't help the sow to be a good mother.

Early weaning

Piglets aged 7-9 weeks, rooting with their mothers



Piglets, removed from their mother at four weeks old, still have an urge to suckle

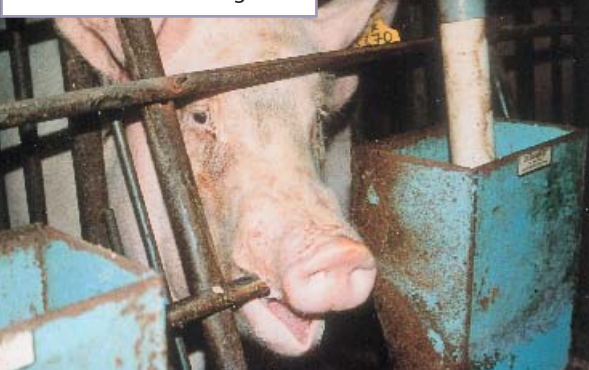


photo: © Marek Spinka

Piglets in intensive farms are separated from their mothers at three to four weeks old, whilst they are still suckling. In natural conditions they would continue to suckle for 13-17 weeks before they are fully weaned. The stress of early weaning can weaken the immune system of piglets, leading to disease. In some countries, antibiotics are routinely used to control this. In organic systems, piglets are weaned later at six or eight weeks old so that they can stay healthy without the use of antibiotics.

Abnormal behaviour in intensively kept pigs

Sow in a stall bar-biting



Sow, group-housed on concrete, sham-chewing



photo: © Marek Spinka

Pigs have a strong urge to forage for food, even when kept in systems where this is not possible. Frustrated animals develop abnormal repetitive behaviours called stereotypies to fill the hours. In pigs these include bar-biting and sham-chewing.

Laying hens

There are over 5 billion laying hens in the world. Most of these live in battery cages. Most battery hens get less space each than this A4 page. This system produces cheap eggs, but does it meet the needs of hens?

In a free-range environment, hens will exercise, scratch the ground to peck for food and flap their wings. They dust-bathe to keep their feathers in good condition. They perch at night to feel secure from predators. When about to lay an egg, they search for a secure nesting site and build a nest.

In a battery cage they can do little of this. They can barely stretch their wings. They cannot perch up high at night. They cannot exercise or scratch the ground. When their feathers get greasy they do still try to dust-bathe, but with no dust the feathers stay greasy.

Scientists believe that the greatest deprivation is the lack of a nest. Research suggests that hens will go to great lengths to fulfil this powerful maternal instinct (see box).

Lack of exercise is bad for their health. It can lead to a disease called osteoporosis. The bones can become very weak. According to one study, over a quarter of battery hens suffer broken bones on the way to slaughter, once their commercial laying days are over.

Natural exercise wears down the claws of a hen, so the claws keep growing. A battery hen's claws grow without wear and can grow around the wire, trapping the hen in place. The wire also makes an uncomfortable perch.



Battery hens

Living space

This A4 page is just under 600 square centimetres in area. In 2003, the minimum space allowance for battery hens in the European Union (EU) was increased from 450 to 550 sq cm. Each hen still gets less space than this page.

In many countries of the world, for example the US, there is no minimum allowance. Each may get little more than 300 sq cm – half this A4 page. In these crowded conditions, hens may have to climb over each other to gain access to food or water. They cannot stretch, or attempt to flap their wings, without disturbing each other.

The traditional battery cage is to be banned throughout the European Union (EU) in 2012. Together with consumer concern, this is leading to an increase in the numbers of free-range and barn hens.

However, the new rules will allow a new kind of cage, furnished with a nest-box, dust-bath, scratch pad and perch.

They will get slightly more useable space – 600 sq cm each (roughly the size of this page).

Early research suggests that hens in the new furnished cage will often lay in the nest, but they may have to wait their turn to use it. The perch is used as a more comfortable alternative to the wire floor of the cage, but will usually not be high enough to give any sense of security. The dust-bath in some prototype cages does not appear to be recognised as such. Any cage is likely to remain a restrictive environment, limiting exercise and much natural behaviour.



US battery cage with 9 hens squashed together.



photo: © István Pamlényi, Swedish University of Agricultural Sciences

Furnished cage from Sweden with perch, dust-bath and nest-box. This is an experimental system designed to meet more of the hens' welfare needs. Can the battery cage be adapted to provide a fulfilling life for hens?

The natural life of a hen

Hens are descended from the red jungle fowl, a wild bird from Asia. Jungle fowl live in small groups containing at least one cockerel, a dozen hens and their chicks. Two or three times a year, each hen will make a nest and lay a clutch of a dozen or so eggs.

At night jungle fowl fly up to perch in trees for protection. During the day they scratch around on the forest floor for seeds, fruits and insects. They dust-bathe to free their feathers of grease and parasites.

Modern hens cannot fly as freely as their jungle fowl ancestors, but they retain most of their basic instincts and behaviours.

They have been selectively bred into two different kinds of breed:

- egg-layers, often kept intensively in battery cages
- meat chickens, usually called broilers, often kept intensively in large crowded sheds



Jungle fowl hen finding food for her chicks

Hens like to



stretch their wings,



peck around for seeds and worms,



bathe in dust to remove grease from their feathers,



lay their eggs in a nest (a powerful maternal behaviour),



and perch at night;



but they can't in a small cage.

The nesting instinct



Hen on a mission to get to a nesting site

The hen in the picture is taking part in an experiment. She is negotiating an obstacle course. The hen is about to lay an egg, and she knows that there is a nest-box at the end of this course.

Experiments show that hens are driven by powerful maternal instincts and will go to great lengths to find a good site to make a nest to lay their eggs in. They will tight-rope along poles, jump across water and walk up to a kilometre to find a good nesting site. They will also use their intelligence – the computer wouldn't open the plastic door in the picture until she pecked the cord three times.

The hen was released from a life in a battery cage in order to take part in this experiment. Scientists believe that the lack of a nest-box may be the worst deprivation of the cage from the hen's point of view.

To see how meat chickens live, please turn over

Meat chickens

This is a meat chicken or broiler. The majority of all farm animals are meat chickens. Each year the UK produces 800 million broiler chickens, the European Union produces 4 billion and the world a massive 44 billion, all to feed a global population of 6 billion people. Before intensive farming came along, chicken meat used to be a luxury. Now it is one of the cheapest meats. This has been achieved by increasing chicken growth rates and stocking densities. However, cheap meat for people can compromise the welfare of animals.



Broiler chickens grow very fast. This is mainly the result of selective breeding, but it also requires concentrated feeds. Fast growth means a chicken shed can produce twice as many batches of chicken per year, greatly reducing costs. However, fast growth can result in chickens suffering from painful lameness, heart conditions and other diseases.

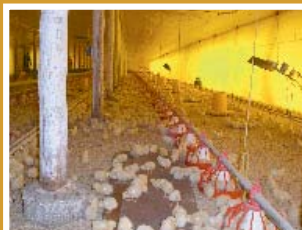
Costs have also been reduced by increasing the stocking density. As the chickens grow, the conditions become ever-more crowded. All those chickens generate heat – a shed of 30,000 birds can generate 450 kilowatts! In hot conditions there can be a high death-rate from

heat-stroke. In the last 2-3 weeks of their 6-week life they increasingly have to pant to keep cool. In one study of four UK broiler farms, it was found that the ventilation systems could only control the temperature inside the sheds properly when the outside temperature was below 18 °C.

Crowded conditions also result in:

- dirtier litter, leading to increased ammonia levels and ammonia blisters (see box)
- increase in disease levels and death rates. Dust and ammonia and general stress can reduce resistance to infection

To begin with there is plenty of space



but as they grow



it gradually becomes



more crowded.



It will be harder to get an undisturbed rest



or to reach the food dispensers,



especially for lame birds.



Their droppings build up, releasing ammonia



which causes blisters on the feet, hocks or breasts.

As crowding increases, the birds may find it difficult to:

- exercise
- rest when they are tired. As soon as they lie down, others may try to walk past or over them
- obtain enough food and water (this is particularly a problem for weaker birds)

Animal welfare organisations are campaigning for controls on intensive chicken farming. In particular

they are demanding a reduction in stocking densities and controls on selective breeding to reduce growth rates.

Meanwhile, intensive broiler chicken farming is becoming a globalised industry, with increasing production in countries such as Brazil and Thailand, partly for export to the West.

Farmers' organisations are concerned that new welfare rules in the West could result in a higher proportion of cheaper chicken meat being imported from elsewhere (see item on the WTO p17).

Lame meat chickens suffer from pain

Many intensively reared chickens suffer from lameness as a result of fast growth caused by selective breeding and concentrated feed. Scientific research suggests that this causes them pain.

In an experiment, broiler chickens were provided with food hoppers containing different proportions of a painkiller called carprofen. The birds with no lameness ate mostly from the food hopper with the lowest concentration of the drug. The scientists suggest that carprofen may cause some unpleasant side effects. The birds who suffered from lameness ate more from a hopper with a higher concentration of painkiller. The lamest birds tended to eat the most painkiller, but even those with mild disorders ate more feed with a higher concentration of painkiller. So, lame chickens can learn to dose themselves with drugs which can control their pain.

In another experiment, lame broiler chickens given carprofen were able to walk much more easily. Not for the first time, scientific research proves something which should be obvious – lame animals suffer from pain.



Crippled meat chicken

Ammonia blisters

As the chickens grow, their droppings accumulate on the floor. As these decompose, ammonia is released, filling the air with unhealthy fumes. Standing or lying on the polluted floor, chickens can get painful breast blisters, hock burns or ulcerated feet (see picture). You can sometimes see these on chickens in the supermarket.

Crowding the chickens means a larger volume of droppings leading to a greater concentration of ammonia and a higher frequency of ammonia blisters.

Hock burns



Free-range and organic chicken

Free-range chicken is increasingly becoming available. You can also buy meat from organic and slow-growing birds.

One of the highest welfare systems is the Label Rouge chickens of France. These are very active, free-ranging birds. They grow slowly, not reaching slaughter weight till 81 days. They are kept in forests which mimic the natural habitat of their jungle-fowl ancestors. The combination of slow growth and natural living conditions produce a higher quality product – 30% of the French whole chicken market is for free-range Label Rouge birds.



Free-range broilers

Selective breeding

The first picture shows a dairy cow, selectively bred to produce very large quantities of milk economically.

Selective breeding has been going on for thousands of years. Traditional farmers may have bred for high milk production as follows:

1. The farmer notices that some cows produce more milk than others.
2. The calves from the most productive cows are kept for breeding.
3. Each generation this process is repeated, so that over time milk yield increases as genetic traits for milk production are selected for.

Modern scientific methods have speeded up this process substantially. Selective breeding has also helped to create:

- beef cattle with more meat on them
- meat chickens who grow quickly
- laying hens who produce a lot of eggs
- sows who give birth to large litters of piglets

All of this has helped to produce large quantities of meat, milk and eggs at cheap prices.

Does selective breeding harm welfare?

Unfortunately, high productivity can come at a cost to the animal. Compare the udders of the dairy and beef cows. The beef cow only produces enough milk to feed her calf, who will suckle from her six or seven times a day. At any one time, she will only need a litre or two of milk in her udder.

The dairy cow, on the other hand, has been bred to produce ten times as much milk as her calf would need. So that people can drink all her milk, the calf is separated from her shortly after birth. She will only be milked twice, or perhaps three times, per day. Before milking, she may have to carry more than 15 litres of milk in her udder.

If you watch the behaviour of dairy cattle, especially the Friesian Holstein breed shown in the photo, you are likely to observe that they are slow lumbering animals. Many may have difficulty getting up or

Dairy cow (Friesian Holstein breed)

photo: © Colin Seddon



Beef cow

walking. Lameness can average 30%, and may be as high as 60% in some herds. The highest yielding animals are more likely to suffer from infertility and diseases like mastitis, a painful udder inflammation. Each year many young cattle are killed as a result.



Belgian Blue bull – an extreme example of selective breeding

Beef breeds can also suffer from the extremes of selective breeding. The picture shows a Belgian Blue bull. This breed was partly the result of a gene mutation. It carried a gene which causes an effect called "double-muscling." It produces large steaks and other cuts of meat.

Unfortunately, the larger quantity of meat can mean a larger calf and a narrower pelvic canal in the mother. Birth can be difficult, and in some herds it is routine to deliver calves by caesarean section. A surgical operation is required which must be repeated annually.



Beltsville pig

Genetic engineering of farm animals?

Selective breeding uses genes which already exist in a species. The new science of genetic engineering means that it is now possible to transfer genes between animal species. The picture shows the Beltsville pig, an early experiment in genetic engineering. This animal was given the gene for cattle growth hormone, partly in the hope that he might grow faster and leaner. Instead, he suffered many side effects such as painful ulcers, blindness and sterility and had to be put down. If genetic engineering is ever commercially successful, what effect will it have on food production and the welfare of farm animals?

Here are some other examples of the side-effects of selective breeding:

- painful lameness is also common in meat chickens as a result of fast growth
- male chicks from egg-laying breeds don't grow fast enough to produce meat economically. Since males don't lay eggs, they are usually killed shortly after birth
- male calves from dairy breeds are often shot just after birth because they don't produce such high quality meat as beef breeds

Can selective breeding be good for animals?

On the other hand, selective breeding can be used to improve the welfare of animals. Some farmers are choosing to use:

- breeds of cow which produce more moderate quantities of milk, but which can remain productive and fertile over a longer life
- dual purpose breeds of cattle, bred for both beef and milk production
- slower growing breeds of meat chicken which have stronger legs and hearts

- less aggressive strains of laying hen which can enjoy better welfare in free-range flocks
- animals who are resistant to disease

Genetics and environment

Milk production and growth rates are controlled by environmental factors such as food supply as well as by genetics. Animals need concentrated diets to grow fast or produce large quantities of milk. Cattle naturally eat forage foods such as grass. To produce large quantities of milk a more concentrated diet with a high grain content is required.

Organic farmers feed their cattle on a more natural diet containing at least 60% forage. Organic cows produce less milk and are likely to be healthier as a result.

Organic farmers are also encouraged to keep dual purpose cattle and slower-growing breeds of chicken.

Consumers can help to discourage extremes of selective breeding by buying:

- slow growing free-range or organic meat chickens
- organic milk
- meat, milk or eggs from rare or traditional breeds of animal



Meat chickens can grow at twice the rate of egg-layers

Selective breeding and the meat chicken

Meat chicks have been selectively bred to grow very fast, with a high proportion of white breast meat. This means they reach slaughter weight very quickly and the shed can produce more batches of chickens per year. Living a shorter life means the chicken uses less food energy in body maintenance.

As a result, fast-growing chickens are cheaper to produce. However, growing this fast presents problems for the chickens. The extra breast meat makes them top-heavy and the legs do not always keep pace with the fast rates of growth. A third or more may suffer from painful leg disorders. As many as 2% may end up unable to walk at all, possibly dying from thirst or starvation if not found and humanely killed. Millions of birds suffer this way every year.

Fast growth requires a great deal of oxygen, and the heart and lungs cannot always keep up. 1% or more can die of Ascites or other heart conditions. In chicken farms at high altitudes, where the

oxygen level is lower, the death rate can be very much higher.

The parents of meat chickens suffer from hunger. Meat chickens allowed to grow beyond their slaughter-weight, quickly become too large and usually die. This is a problem for those who breed broiler chickens since these animals have to live long enough to breed. To keep them alive and as healthy as is possible, the parents of broiler chickens are kept on reduced rations, perhaps a quarter to a half of what they would choose to eat.

Broiler chickens have been bred to be hungry so that they eat enough to grow fast. The parents of broiler chickens have also been bred to be hungry, but they must suffer from that hunger if they are to live long enough to breed.

Many chickens suffer painful leg disorders



Alternatives to factory farming

The picture shows a group of French *Label Rouge* chickens. These are a slow-growing breed kept in natural woodland surroundings. They live for 81 days, compared to 42 days for the typical intensive broiler. They cost more to buy, but French consumers pay extra



for taste and quality. 30% of meat chickens sold whole in France are *Label Rouge* birds.

Other Western countries are also seeing a move back to kinder rearing methods. In the UK, more than 30% of whole eggs sold in supermarkets are from free-range or barn systems. Free-range meat chickens are widely available and there is increasing demand for free-range and organic pork, bacon and ham. At Christmas, free-range turkeys are widely available in the shops.

Free-range means that animals should be able to go outside, at least during the day and during the summer. They should be able to perform most of their natural behaviours. No system, including free-range, can ensure that the animals will be happy. Much depends on how well they are cared for, but free-range systems have the potential to meet the needs of animals.

Organic systems

Organically-raised animals must also have access to the outdoors, at least for part of their lives. The welfare potential of organic meat, milk and egg systems can often be even better than for free-range because:

- most are run according to internationally agreed standards, including the requirement that animals are allowed outside
- organic farmers have to be inspected and certified
- organic animals are often kept in less crowded conditions to reduce the risk of disease spreading
- other specific rules are good for welfare. Piglets cannot be weaned till 6 weeks. Meat chickens and laying hens must be kept in smaller groups than is common in free-range systems. The Soil Association, the UK's largest organic body, goes further, and insists that piglets are weaned at 8 weeks and that chickens are kept in even smaller groups.

Organic systems are also designed to be kinder to the environment. Organic animals eat food which is GM-free and most of which has been grown without chemical pesticides or weedkillers. As with free-range systems, organic animals may be kept inside at night and during winter.

Semi-intensive systems

Some indoor systems meet some of the behavioural needs of farm animals. Hens can be kept in barns rather than cages. Barn hens can dust-bathe, perch and exercise and they are provided with nests to lay their eggs in.

Piglets in semi-intensive system



Pigs can be provided with deep beds of materials like straw, woodchips or rice husks. The animals may spend hours foraging through the materials. It gives them something to do, it provides a comfortable bed and roughage in the bedding helps to assuage their hunger.

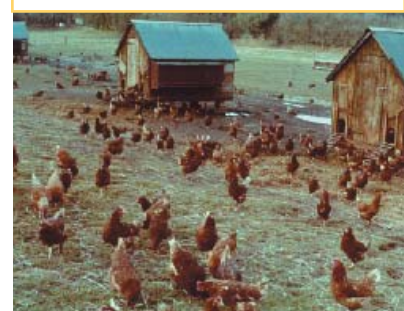
The best systems

The very best free-range and organic systems pay particular attention to the needs of animals. Pigs and chickens are both woodland animals and naturally live in small groups. Chickens feel more secure if they are given cover to protect them from predators. There can be less aggression if the animals are kept in small groups.

When shopping, if you read the packaging carefully, you may be able to find:

- Label Rouge chickens, kept in woodland
- Chickens kept in small groups
- Eggs laid by hens kept in small groups, perhaps with access to woodland

The best free-range systems keep the hens in small groups



Can people afford free-range?

Many farmers would like to raise their animals free-range, but are concerned that consumers will not be prepared to pay the extra cost. Are free-range and organic animal farming economically viable?

They can be. Most of the world's sheep are kept free-range. So are a significant proportion of beef and dairy cattle during the summer months. Some pigs are still kept outdoors in many parts of the world. Outdoor pig breeding can be economical because it is much cheaper to set up. Expensive buildings and stalls are not required. However, it is more expensive in labour. This can be a great help in providing work in depressed rural communities.

Free-range egg production is a little more expensive than the battery system. On average, it costs 1.5p extra in the UK to produce a free-range egg than a battery one. However, supermarkets may charge more than this.

Free-range chicken meat production is more expensive than intensive broiler meat, and a free-range or organic bird can cost £2 or more extra in UK supermarkets. Nevertheless, there is an increasing demand for free-range chicken as a quality product. Many consumers claim it tastes better.



Outdoor pig keeping can be economic with lower capital costs

What does a chicken's freedom cost us?

Much is quite rightly written about the cost of free-range farming for the consumer, but what is the cost of a day's freedom for a chicken? Simple calculations suggest that it doesn't cost much.

Hens lay, on average, one egg per day. If you eat a battery egg, a hen will on average have been caged for 24 hours. A free-range egg costs an extra 1.5 pence to produce. So this is also what it costs, per day, to free a hen.

A free-range or organic chicken may cost £2 extra to buy. The chicken will have lived 56-81 days with access to the outdoors, rather than 42 days in increasingly crowded conditions. The meat chicken's freedom also costs a few pence per day. The free-range meat chicken also lives longer than an intensively reared one.



Free-range birds are more expensive to produce, but a chicken's freedom still only costs a few pence per day

Consumers make a difference to animals

Every consumer can make a big difference to the welfare of farm animals. The average Briton, for example, will consume the following in a lifetime:

- over 1000 chickens
 - 45 turkeys
 - 30 sheep
 - 20 pigs
 - 4 beef cattle
 - the life's work of 35 laying hens
 - all the produce of a dairy cow
- in addition to thousands of fish. The lives of these creatures depend on the choices consumers make.

People may choose to:

- eat the cheapest meat, milk and eggs. Apart from the sheep and some of the cattle, these are likely to be produced by intensively reared animals
- eat free-range, barn or organic products
- eat less meat
- go vegetarian or vegan

Whichever people choose, these food decisions are likely to make more difference to the animal suffering in the world than any other choices they make.

A photograph of a young calf, likely a Holstein-Friesian, standing in a wooden stall. The calf has a white face with brown patches around its eyes and on its ears. It is looking directly at the camera. The stall is made of vertical wooden planks.

As a result of public pressure:

- ☐ the veal crate and the sow stall are banned in the UK and the sow stall will be banned in the Phillipines and Florida
- ☐ the battery cage is banned in Switzerland
- ☐ both the sow stall and the farrowing crate are illegal in Sweden

- ☐ the veal crate from 2007
- ☐ the traditional battery cage from 2012, though a new kind of furnished cage will still be permitted
- ☐ the sow stall from 2013, except for the first four weeks of pregnancy

- require that pigs have permanent access to materials such as straw, sawdust or mushroom compost to allow foraging and exploratory behaviour
- require that sows must be given suitable nesting material in the week before farrowing, unless this is not technically feasible for the slurry system used
- prohibit routine tail docking of piglets. If piglets injure each other, measures to improve the piglets' environment must be taken before resorting to tail docking

There is public pressure for governments to ban other intensive farming systems such as:

- ☐ intensive meat chicken farming
- ☐ the farrowing crate for lactating sows
- ☐ intensive fattening systems for pigs
- ☐ the furnished cage system for laying hens

Both animal welfare and farmers' groups are lobbying for changes to these WTO rules. Meanwhile, as governments in the world's more economically developed nations pass legislation to control some of the more extreme animal systems, factory farming is spreading to less economically developed countries.



International regulations governing trade in intensively farmed products

In 2012 the traditional battery cage will be banned in the EU, but the EU may not be able to ban the import of battery eggs from outside its borders because of free-trade rules.

The rules of the World Trade Organisation (WTO) encourage free-trade. They are designed to prevent countries from setting up unfair barriers to trade. Governments believe these rules prevent them from banning the import of:

- goods produced by child labour
- goods whose production damages the environment
- the products of intensive farming systems such as sow stalls and battery cages

EU farmers argue that this puts them at an unfair disadvantage. If they produce eggs in kinder but more expensive systems, they will not be able to compete with cheap imports.

There is pressure on the EU to drop its ban on battery cages if world trade rules cannot be altered. Meanwhile, animal welfare groups are campaigning hard to allow governments to ban imports from systems that they have prohibited on grounds of cruelty.

Effects of free-trade rules on less economically developed countries

Free-trade rules are also a problem for farmers in developing countries who are also facing stiff competition from imports. For example, dairy farmers in such countries as the Dominican Republic, Jamaica, India and Kenya are facing tough competition from imports of milk powder from countries in the EU and North America. The imported milk is made cheaper by a combination of intensive farming methods and government subsidies. Many poor farmers are likely to go out of business as a result.

Some argue that if the EU were to ban the import of intensively farmed products, then producers in the developing world would suffer. Currently, Brazil and Thailand both export huge quantities of intensively produced chicken breasts to the EU. However, the rapid development of intensive farming in less economically developed countries is threatening the livelihoods of their numerous small farmers (see pp20-21). A ban on intensively farmed exports to developed countries could help small farmers. It might provide a better opportunity for them to develop an export market for produce from their traditionally reared free-range animals.

Labels and consumer choice

Free-trade campaigners often argue that the consumer should make the final choice about whether they buy intensively produced, free-range or organic food. Animal welfare groups believe that legislation is needed to ensure that animals are treated humanely.

New European laws require labelling of some products. For example battery eggs must carry a label saying that the eggs come from caged hens.

However, under WTO rules this legislation cannot apply to eggs imported from outside the EU. Imported eggs cannot be required to carry a label stating the method of production.

Animal welfare groups and EU farmers would like WTO rules to permit countries to insist that imported products such as battery eggs must be labelled as such.



DISCUSSION

Should the consumer decide?

Free-trade rules leave consumers to choose whether to buy products that have been produced:

- using child labour
 - in a way which damages the environment
 - in intensive animal farming systems
- Should consumers have these choices?

Feeding the world – environment and resource implications

The world's population is expected to rise by about 50% before it stabilises towards the end of this century. Average meat consumption is expected to rise even further as people in less economically developed countries acquire the meat-eating habits of their richer neighbours. World meat consumption is currently increasing by about 2% per year, and on present trends would more than double in the coming century.

The rise in meat consumption is likely to place huge strains on the world's environment and resources. Meat consumption is fundamentally inefficient. When a pig eats corn, only about a quarter of the energy it consumes, and rather less of the protein, ends up in the meat that people eat. The rest is either used:

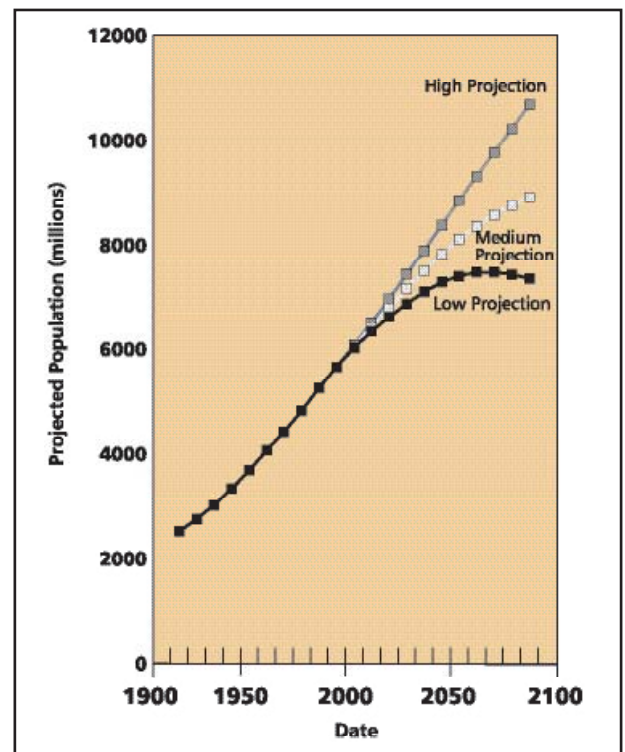
- in respiration to provide energy for movement, warmth and other body requirements
- to produce bones, skin and other body parts which people do not eat
- or is wasted in the pig's faeces

The inefficiency of this process helps to explain why, in many of the world's most economically developed countries, more grain is fed to animals than to people.

Increases in meat production are likely to:

1. Consume huge amounts of grain. Feeding cereals to animals could increase grain prices, making life even harder for the really poor who cannot afford meat. The heavy dependence on grain for feed means that animal farming requires very large amounts of scarce resources such as land, water and energy. Some scientists believe this is unsustainable. Growing all this grain is also likely to involve the use of weedkillers, insecticides and fertilisers which can pollute the land and waterways.
2. Put pressure on the world's wildlife habitats. Large parts of the Amazon rainforest are being cut down to make way both for extensive cattle ranching and to grow soya beans to feed to animals. This can be unsustainable – rainforest soils often degrade quickly when used for agriculture.

World Population Growth



Source FAOSTAT

Intensive vs free-range



2 ways of feeding the world: you can produce large quantities of intensively produced meat which will be cheap for consumers; or you can produce smaller amounts of more expensive but higher quality meat using free-range or organic methods which can improve the environment and the welfare of farm animals whilst providing more employment in the countryside.

3. Contribute to the Greenhouse Effect and global warming. Cattle, sheep and goats produce methane. The destruction of the rainforests causes the release of large quantities of carbon dioxide into the atmosphere. The conversion of land for agriculture and the use of nitrogen fertilisers increase levels of nitrous oxide in the air. Carbon dioxide, methane and nitrous oxides are three of the main greenhouse gases.

In a free market, much of this meat will be produced by intensive farming since it can be produced cheaply. However, policies aimed at producing the cheapest possible food impose additional costs on society because intensive farming:

- can be bad for animal welfare
- produces concentrations of manure and other wastes which can pollute the water
- puts small-scale family farms out of business when they can't compete with the intensive farms on price

Can we feed the world without intensive farming? Farmers in less economically developed countries already produce moderate quantities of meat, milk and eggs quite efficiently using free-range methods. Cattle, sheep and goats are fed on grass and crop by-products that people wouldn't eat. Free-range pigs and chickens can supplement their diet by eating scraps and foods they can forage for themselves. A moderate expansion of sustainable free-range and organic animal farming could do much to boost rural incomes.

Meat and other animal products can provide useful amounts of protein, together with some vitamins and minerals, as part of a balanced diet. However, many health experts believe that high levels of meat consumption can increase rates of heart disease and cancer partly because many animal products contain high levels of saturated fat. Diets containing little or no meat can also be balanced and healthy. There are vegetarian and vegan alternatives to meat and other animal products. Diets which are largely or wholly based on plants are likely to contain more fibre, antioxidant vitamins A, C and E and other plant biochemicals such as lycopenes. Together these are thought to be protective against cancer and heart disease.

How should we feed the world? We could produce large quantities of intensively produced meat which will be cheap for consumers. Alternatively, we could produce smaller quantities of more expensive but higher quality meat using humane and sustainable farming methods which keep small farmers in business.



Sustainable cattle ranch in central Brazil. In this farm, trees and shrubs have been encouraged to grow to provide shade for cattle and to collect nutrients from deep in the soil. Indigenous breeds of cattle are used which are adapted to the climate. A moderate development of this kind of farming on land already used for rearing livestock could have some environmental benefits, especially in systems where they can graze throughout the year and where cattle are fattened on grass rather than grain. The development of cattle ranching further west in the Amazonian rainforest is an environmental disaster.



In developing countries, most of the labour force is in agriculture. Will intensive farming, combined with unrestricted free-trade, put millions of these people out of business as it has in the developed world?

Factory farming and rural employment

In developing countries, most of the labour force still works in agriculture. Most farms are small. Many still keep their animals traditionally in free-range conditions. Farmers often depend heavily on their animals for such income as they get.

However, in some developing countries factory farming is increasing rapidly. Large factory farms produce animal products cheaply, especially for consumers in the cities. Unfortunately, cheaper meat for the urban populations means that rural people get lower prices for their animals. Their incomes drop. Many end up leaving for the towns in the hope of making a better living.

In Santa Catarina, a small state in the south of Brazil, more than 20,000 families left the countryside in 1998 alone. Will they find work? Unemployment rates in Brazilian cities can be as high as 20%. Impoverishment of the countryside can increase social problems in the towns.



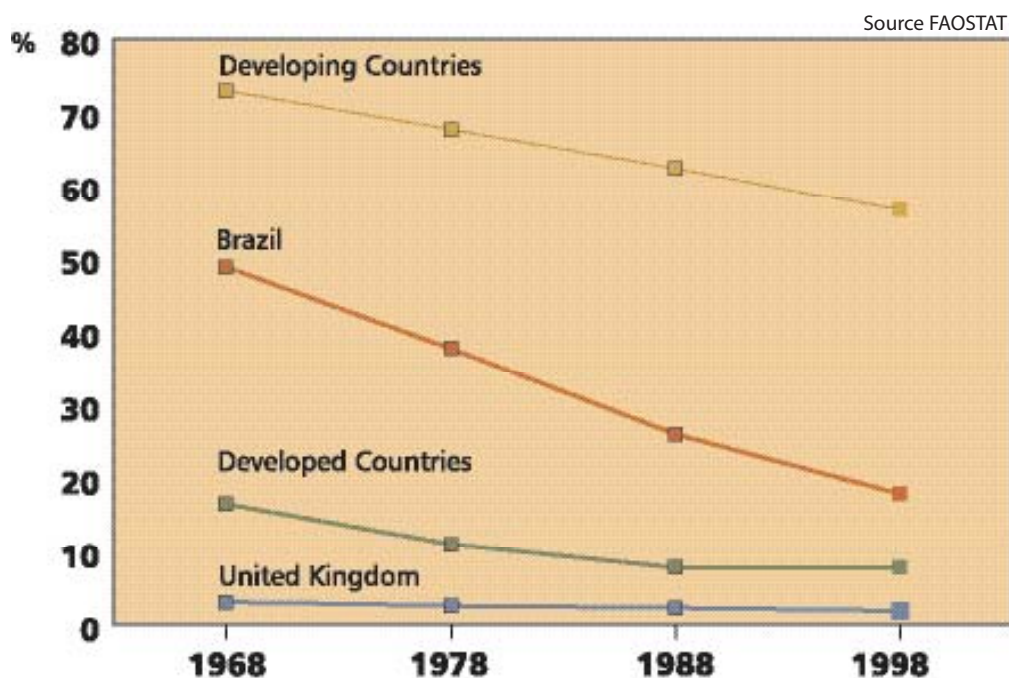
Free-range pig production, Brazil

Reductions in the agricultural labour force in developed countries

In the developed world, this process has been continuing for centuries. In the United Kingdom, less than 2% of the labour force is now in agriculture. Even this figure is dropping rapidly. Again this is partly the result of intensive farming.

Many farmers have had to struggle to make a decent living. Some have reduced costs by making their farms more intensive, for example by crowding the animals closer together. For a while the farmer was able to make a reasonable income.

Supermarkets and other buyers respond to this kind of situation by lowering the prices they pay to farmers, who now have to become even more intensive to make a decent living. Some farms become bigger, taking over their less successful neighbours who have gone out of business. Workers are laid off. Those who remain have to look after larger numbers of animals.



Agricultural workers as a percentage of the total labour force

This cycle results in cheaper and cheaper food. It enables farmers to produce large quantities of meat. However, the quality may not be the same. Conditions for animals become more intensive. They receive less individual care. Farmers go out of business or have to work even longer hours. Job satisfaction may be affected.

This process is likely to continue:

- so long as many consumers buy the cheapest meat, milk and eggs
- so long as laws permit intensive factory farm systems



Intensification and the dairy cow

In 1950 a British farmer needed 15 cows to make a decent living. Today a herd of 120 cows is required. In 1950, cows might produce 3000 litres of milk per year; today the average is 6000 litres, and some individuals produce over 10,000. Intensive production can compromise the welfare of animals; it can also mean fewer jobs in farming.

Alternative choices for developing countries

The development of factory farming in developing countries increases at a rate far greater than ever occurred in the developed world. Large factory farms can be set up very rapidly using know-how and finance from abroad. Farmers in less economically developed countries also face competition from abroad. In the developed world, the trend to fewer and bigger farms has been a painful but relatively gradual process. In the developing world this process could be much more rapid.

Meanwhile, governments in countries such as Brazil are trying to reverse the trend towards intensive farming. In Santa Catarina, efforts are being made to develop smaller scale, humane and sustainable farming systems to provide an income for smaller farmers and enable them to stay in business. One scheme enables farmers to keep meat chickens in flocks of about 1000. Slow-growing chickens, based on traditional breeds, are kept in free-range conditions to provide a tastier higher-quality bird. Researchers at EMBRAPA, the research institute that runs the scheme, believe that quality production like this may be able to reach 10% of the market in Brazil.

This kind of small scale farming has many potential benefits. The consumer gets a higher quality and tastier product; the farmer can still make a traditional and more sustainable living and the chicken gets a longer, more satisfying life.

Global Choices

The world has choices to make. One is to permit intensive animal farming. Large quantities of meat, milk and eggs are produced at the low prices many consumers appear to demand. However, animals suffer behavioural deprivation and avoidable stress. Farmers continue to go out of business at a rapid rate. The environment of the planet is degraded.

Another choice is to ban the most intensive factory farming systems. People in developed countries eat less meat, though the quality may be higher. Animals are kept in an environment which meets more of their behavioural needs. More people can continue to work in farming. The planet's environment receives less damage.

The second choice depends in part on the willingness of governments to pass legislation and to co-operate with each other. However, consumers can also choose whether their shopping baskets support a better life for animals, for small farmers and for the environment.



Small scale systems for the production of meat chickens and eggs being developed by the research institute EMBRAPA in Santa Catarina, Brazil to help small farmers to make a better living.

Why should we care about farm animals?

People disagree about how much animals matter, the reasons why they should matter and even whether they matter at all. Should we always put people first, or do non-human animals also have needs of fundamental importance?



Farm animals can suffer



yet can have their share of joy

Well over 95% of domestic animals live on farms. Today more than 50 billion are reared and slaughtered each year for food, and this number is likely to more than double during the course of the century. Some people believe that farm animals are there to provide food for people and we can keep them however we like. Others believe that it is fundamentally wrong to exploit or kill them for food. A third view is that it is acceptable to use farm animals for food provided that they have a good life and as humane a death as is possible.

If animals matter, it may be because:

- they are sentient beings. In other words, they have feelings which matter to them
- they can suffer pain and distress
- they can be happy and enjoy life
- they may care about each other, whether for their offspring or for their companions
- they have intelligence and a mind of their own

So how do farm animals matter and how should we treat them? This booklet aims to provide much of the information needed to make that ethical judgement. How people interpret this information will depend on their values.

Animals can suffer pain



Many intensively reared meat chickens develop mild or severe lameness as a result of the speed at which they grow. Experiments suggest this causes them pain and they can quickly learn to dose themselves with painkiller to deal with this (experimental details p10).

Pain is an adaptation that motivates animals to avoid injuring themselves. Lameness prevents an animal with an injured or inflamed leg from injuring itself further.

Pain also affects welfare. Pain causes suffering. Some pain is a necessary part of life, but the infliction of avoidable pain is one form of cruelty.

Animals display intelligence



Pigs have learnt to play a computer game which was originally designed for chimpanzees. They use the joystick to move a cursor on the computer monitor. When it hits the blue target, they get a sweet. The biggest surprise is that the pigs performed better in this task than most of the chimps who attempted it.

Experiments show that sheep can recognise up to fifty other individuals, and if separated can remember them at least two years later. They form long term relationships. One farmer moved three sheep from one flock to another for management reasons. Two weeks later, the two flocks were placed in adjacent fields. The three sheep immediately tried to rejoin their original flock.

Sheep can recognise up to fifty other individuals



Animals have feelings which matter to them

The picture shows Meg, a free-range hen who lost a leg in an accident. Brought to an animal welfare centre, Meg was bandaged up and animal welfare worker Roz Bicen took her home to recover. Meg settled down in the kitchen, and gradually got better. Then, one morning, she became restless. She kept hopping all over the kitchen. After a while, she encountered the cat-flap and, after much experiment, managed to make her way outside. There she hopped across the yard, found an open rabbit hutch, popped in, made a nest and laid an egg.

When a hen lays an egg, she is not thinking of our breakfast! Experiments show that egg-laying involves powerful emotional feelings governed by instinct and that hens will go to great lengths to lay their eggs in nests (see p9).



Animals will care for their young

Many social animals have powerful maternal instincts. A sow will often respond if one of her piglets squeals. She will defend her young against attack.

Mothers will deny themselves for the sake of their offspring. One hen raised a brood of chicks, and would scratch around in the soil to expose worms and insects for her chicks to eat. A container full of blowfly maggots was dropped nearby. She scratched them all up, one by one, to show her chicks. They ate them greedily. The hen herself didn't eat a single one.

Many would argue that this behaviour is instinctive. This may well be true, but this instinct appears to work using powerful emotional feelings. Many of our own most powerful feelings, including maternal and paternal ones, are driven by strong emotional instincts.



Animals will care for their companions

In Uganda, a boar of the African giant forest pig "had been wounded by a spear and was partially paralysed in the hind legs. He was limping badly and four of his family were close around him, trying to help him out of a mud hole and making a great noise about it."

Pigs are sometimes kept as pets. There are similar stories of them rescuing their human companions. On a hot summer's day, Carol Burk and her 11-year old son Anthony, went swimming in their local lake accompanied by Priscilla, a two-month-old piglet. Anthony got out of his depth and started struggling. Mother and piglet swam to his aid, but Priscilla got there first. The boy grabbed her halter, pulling her under the water twice, but she managed to pull

Anthony back to the shallows. It is said that, years later, Priscilla would still become upset when she saw young children playing near water.

Joanne Altsmann had a large pet pig called Lulu. Joanne suffered a heart attack. Lulu forced her way outside through a very narrow opening, injuring herself slightly in the process. She then ran into the middle of the road, forcing a car to stop. Somehow she managed to indicate to the driver to follow her to the house and to come to Joanne's aid.

Cattle can also be protective. In 1996, farmer Donald Mottram was attending to an injured calf. A rampaging bull charged from behind, tossing him in the air, trampling and kicking him. He passed out. On regaining consciousness he was amazed to find out that some of his favourite cows, including Daisy, Megan, Amy, Bethan, Mary and Kitty, had formed a protective circle around him to ward off the bull. As he struggled to his hands and knees to crawl the 200 yards out of the field, the cows maintained their cordon. Forming a mutually protective circle is the instinctive response of cattle to danger; here they appear to have done it in solidarity with a human being to whom they felt attached.

Research ideas – survey a range of opinions

A range of philosophical opinions

People disagree about whether animals should be kept in intensive systems. Animal welfare organisations believe that animals are sentient beings, sharing with people a capacity for both happiness and suffering. Animal welfare organisations oppose intensive farming systems as they do not meet the welfare needs of animals. They are also opposed to long-distance animal transport and inhumane slaughter methods.

Animal rights organisations share these views, but also question whether people should eat animals at all. They believe that people are animals too and that the basic human rights principle that all individuals matter irrespective of race, creed or colour also applies to other animals. Animal rights organisations generally support vegetarian and vegan lifestyles.

Environmental organisations are primarily concerned about the damage that high meat consumption and intensive farming can do to the environment. They are concerned that our use of the planet should be sustainable – we don't inherit the earth; we borrow it from our children.

Farmers' organisations represent their members who can include intensive, free-range and organic farmers. Most try to be supportive of all systems of agriculture in their own countries. Many argue that farmers would like to improve welfare standards, but this depends on consumers choosing to pay extra for humanely-produced food.

You can research the websites below to examine these views in more detail.

Research a range of facts and opinions on intensive animal farming and its alternatives



Animal welfare groups

Advocates for Animals (Scottish animal welfare group)
www.advocatesforanimals.org.uk

Compassion in World Farming (CIWF)

- UK-based international campaign group) www.ciwf.org

Farm Sanctuary (US farm animal protection organisation)
www.farmsanctuary.org

Humane Slaughter Association www.hsa.org.uk

Humane Society of the United States www.hsus.org

Royal Society for the Prevention of Cruelty to Animals
www.rspca.org.uk

Scottish Society for the Prevention of Cruelty to Animals
www.scottishspca.org

World Animal Net www.worldanimal.net (links to animal groups worldwide)

Animal rights and vegetarian groups

Animal Aid www.animalaid.org.uk

International Vegetarian Union www.ivu.org (links to vegetarian groups worldwide)

People for the Ethical Treatment of Animals (PETA) www.peta.org (links to several US animal rights sites)

PETA Ltd www.peta.org.uk

Vegan Society www.vegansociety.com

Vegan Village www.veganvillage.co.uk

Vegetarian Society www.vegsoc.org

VIVA! (Vegetarian International Voice for Animals) www.viva.org.uk



Environmental organisations

Friends of the Earth www.foe.org

Greenpeace www.greenpeace.org

Sierra Club www.sierraclub.org/factoryfarms

World Wide Fund for Nature (WWF) www.wwf.org



UK farming organisations

Country Land and Business Association
www.cla.org.uk

Farmers Union of Wales www.fuw.org.uk

Federation of City Farms and Community Gardens www.farmgarden.org.uk

Farming and Countryside Education
www.face-online.org.uk

Meat and Livestock Commission

www.mlc.org.uk National Farmers Union

www.nfuonline.com

Soil Association (association for organic farming) www.soilassociation.org.uk

Sources of more detailed information

Department for Environment and Rural Affairs (DEFRA) www.defra.gov.uk/animalh/welfare/default.htm for the UK government's policies on farm animal welfare

European Commission www.europa.eu.int/comm/food/fs/aw/index_en.html for the European Union's policies on farm animal welfare

European Commission's Panel on Animal Health and Welfare

www.efsa.europa.eu/en/science/ahaw/ahaw_opinions.html for a range of detailed reports on farm animal welfare issues

Farm Animal Welfare Council (UK) www.fawc.org.uk

United States Department of Agriculture www.nal.usda.gov/awic/farmanimals/farm.htm for the US government's policies on animal welfare

Sub-directories may change. Try the home pages or a search engine if these web addresses don't work.

Compassion in World Farming is a charity promoting concern for farm animals and the environment

UK OFFICE: Compassion in World Farming, River Court, Mill Lane, Godalming, GU7 1EY

Tel: 01483 521950 **Fax:** 01483 861639

E-mail: education@ciwf.org

Website via CIWF's home page at: www.ciwf.org

All CIWF resources may be photocopied for educational purposes

Registered charity number: 1095050