

NATIONAL FARMERS' UNION

WORLD WAR ONE: THE FEW THAT FED THE MANY

BRITISH FARMERS AND GROWERS PLAYED A SIGNIFICANT ROLE IN THE WAR EFFORT DURING 1914-1918 TO PRODUCE FOOD FOR THE NATION. THIS REPORT FOCUSES ON HOW THE EVENTS OF THE GREAT WAR CHANGED THE FACE OF BRITISH FARMING AND CHANGED THE WAY FARMERS AND GROWERS PRODUCED FOOD.



LED BY IWM



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In the lead up to World War One the population of Great Britain was 45 million with 1.5 million employed in agriculture. As hundreds of thousands of male farm workers left the fields for the front line, those left behind were expected to produce the food for the nation.

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BRITANNIA RULED THE IMPORTS

After the agricultural depression of the 1870s, British agriculture was largely neglected by government. The development of refrigeration and the Industrial Revolution, that brought steam engines and railways into force, impacted heavily on British farmers. Countries were suddenly able to transport produce across huge distances to the ports. Meat, eggs, grains and other goods were transported on ships from Australia, South Africa and Brazil. Britain also depended heavily on Germany for wheat, flour and sugar beet.

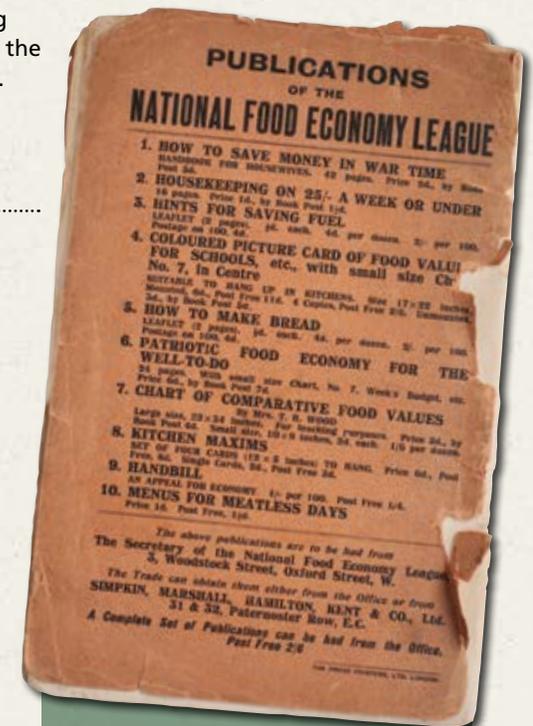
By the outbreak of the First World War on 4 August 1914, Britain was 60 per cent reliant on imports for food supplies and other commodities such as fuel and fertilisers.

The question of domestic food production was raised in a report in 1905 from the Royal Commission on the Supply of Food and Raw Materials in Time of War. It recommended that "it may be prudent to take some minor practical steps to secure food supplies for Britain". The Government focused on the carrying capacity of the merchant fleet and the Royal Navy to keep the shipping lanes open and did not heed these early warnings. Over the coming years it would come to learn just how valuable farming in Britain was to the nation's survival.

FOODS THAT FEED

The pre-war diet largely consisted of white bread, eggs, potatoes, meat, jam, sugar and tea. Food was measured by its calorific value, rather than by its nutritional value, which is how we measure food today. The war began to alter this attitude as we learnt more about the right foods to fuel our bodies. The pre-war diet was deficient in vital vitamins and minerals which led to soldiers suffering from scurvy and led to difficulty in healing from wounds. Books emerged towards the end of the war to encourage people to include a variety of food groups in their diet. *The National Food Economy League Handbook for Housewives* was published in 1918 with these headings on nutritional needs:

- 1 MATERIAL TO BUILD THE BODY AND REPAIR WASTE
- 2 MATERIAL TO GIVE HEAT AND STRENGTH
- 3 MATERIAL TO ENRICH AND CLEANSE THE BLOOD
- 4 MATERIAL TO FORM BONE



The National Food Economy League produced a number of publications during the war on how to save money and food.

Photo: The Great Food Club Magazine

CASE STUDIES



THE HUMBLE PEA

The Ashton family have been farming at Eye Farm, Sutton in Lincolnshire since 1895. The farm produced dried peas during the First World War which remained a staple of the British diet and an important and economic source of vitamins during wartime.

John Ashton's family, along with other British farming families, were faced with significant shortages during the war – particularly labour. "Back then, the work was very skilled and had to be done by hand. This meant that when a lot of the workers enlisted, my grandfather had to get more help on the farm. My father remembers the soldiers coming to the farm to help with the harvest from 1916. It was such a skilled job and such an important crop and I'm not sure if they would have been able to do it without the help of those soldiers. A lot of the soldiers sent back from the front line already knew what they were doing so they got to work straight away. We had women on the farm as well helping out with the light work, everyone pulled together."

Watch the video at www.nfuonline.com/pea

THE BLIND FARMER

Sam Taylor was a trained pork butcher before the First World War. Aged just 18, he enlisted on 30 April 1917. He was blinded on 27 April 1918 and spent a time at the 2nd London General Hospital where he was visited by Sir Arthur Pearson, the founder of St Dunstan's, now The Blind Veterans UK.

After a period at St Dunstan's, where he was rehabilitated and taught new skills such as basket weaving, the cello and how to read and write in braille, Sam

chose to train as a farmer and went to St Dunstan's poultry farm at King's Langley on 28 April 1919. Sam got his first tenancy farm at Morley Farm in Leicestershire with 50 acres with the support of St Dunstan's. He kept a mixed farm with 28 dairy cattle until he bought Ingleberry Farm next door, where the family still farm today. The Taylors are now in their fourth generation of farming and currently have 5,000 acres of arable land and have a number of combines for contracting work.



Watch the video at www.nfuonline.com/blindfarmer

WOMEN'S LAND ARMY

Angus Stovold's farm in Shackleford, Surrey, employed women from the Women's Land Army (WLA) during the war. "I remember speaking to my grandfather and our ploughman



Harry Davis about what it was like on the farm during the war. Harry, along with most of the men and the horses went off to war early on leaving the family in difficulty trying to get all the work done on the farm. They sent some soldiers to help out and prisoners of war but, the reality is, without the women, Britain would have starved. We've got an old video from 1917 of women ploughing on the farm and they were just as good as the men. With the right training, they were able to do everything that the men did. We owe a great deal to the Women's Land Army and those that stepped up to help when farms were left short of labour, horses and machinery." The aims of the Women's Land Army were to recruit women for agriculture, break down the anti-feminine bias and organise 'gangs' for farm work. Some women did also enter farming of their own accord or already helped on family farms.

Watch the video at www.nfuonline.com/wla

THE COST OF IMPORTS

In the late 18th Century, British farmers produced enough food to feed the whole population and had surplus grain for exports. This changed when the Corn Laws were repealed in 1846 and free trade came into force. British agricultural systems had to operate differently with the virtual disappearance of small owner-occupier holdings and landowner-tenant holdings became dominant.

Imports began to increase from 1870 with a particular dependence on cereals. Britain's pre-war policy of free trade allowed a 'grain invasion' from other countries. The policy was in direct contrast with the protectionist policies adopted by Germany. The Government believed that importing grains and other food supplies would reduce the nation's food bill but it offered no protection from foreign competition. As a result, British farmers adapted and agriculture adopted a predominantly livestock dominated production system. It was the British consumers' preference for white bread that made the demands for wheat and flour so high.

During the early 20th Century France and Germany imposed duties on cereals and livestock products (1/3 value). Britain's political commitment to free trade was a significant factor in the decline of British agriculture as part of the national economy.

By 1901, the employment of men in agriculture had fallen to just 12 per cent of the male population, echoing the subsequent decline in domestic food production.

By the time of World War One the Government's reliance on imports threatened to cost Britain the war as supply routes became either completely cut off or increasingly treacherous. Merchant ships became targeted by German U-boats from 1916. By 1917, Germany declared unrestricted warfare and sank one in four merchant ships in the Atlantic.

With food shortages looming after poor harvests in 1916 due to severe weather (10 hurricanes, four tropical storms and one extra-tropical storm) the Government turned to

TRADE LINES BEFORE THE GREAT WAR



Watch the video case studies of the few that fed the many in Britain. Watch the video at www.nfuonline.com/WorldWarOne

British farmers to feed Britain. A ploughing up campaign was introduced to turn pastures over to arable production, something that had been neglected for more than 70 years. British farmers were faced with a seemingly impossible task. Feeding the nation with a shortage of horses, a lack of machinery and a short supply of men would be a remarkable achievement. Then, as now, farmers were ready to rise to the food production challenge ahead.

By 1918, the area of land under arable production had

increased by 2.5 million acres with nearly nine million acres of land planted with grain and potatoes – the largest harvest the country had ever seen.

The outbreak of war should have prompted a change in attitude towards food security. However, the Government remained confident in the Royal Navy's ability to keep the shipping lanes open and committed to imports to reduce costs to the exchequer. History shows that this strategy came dangerously close to costing Britain the war.

THE EVOLUTION OF FOOD POLICY

World War One saw the emergence of the British sugar industry. Britain had been dependent on Germany, Austria and Hungary for around two-thirds of its sugar beet. From 7 August 1914, as this trading ceased, the Government turned to the East and West Indies. The Cabinet Committee created the Royal Commission on Sugar Supplies on 20 August 1914. Britain relied on imports for almost 100 per cent of sugar supplies. This was unsustainable and in 1936 the Government passed the Sugar Industry (Reorganisation) Act and created the British Sugar Corporation to manage the entire UK sugar beet crop.



Herbert Henry Asquith.
UK Prime Minister
1908-1916

The First World War acted as a model for food policies for the future.

Herbert Henry Asquith's Liberal Government was in power at the outbreak of war. It operated a 'business as usual' approach to food production, believing that the war would be over by Christmas.

However, panic buying set in after news of the war broke; the Government reacted by

passing the Defence of the Realm Act (DORA) on 8 August 1914. DORA awarded the Government wide-ranging powers such as the requisitioning of buildings or land needed for the war effort. The Government assured the British public that there was no need to worry. Panic buying settled but the Government needed to review its legislation as the war continued.

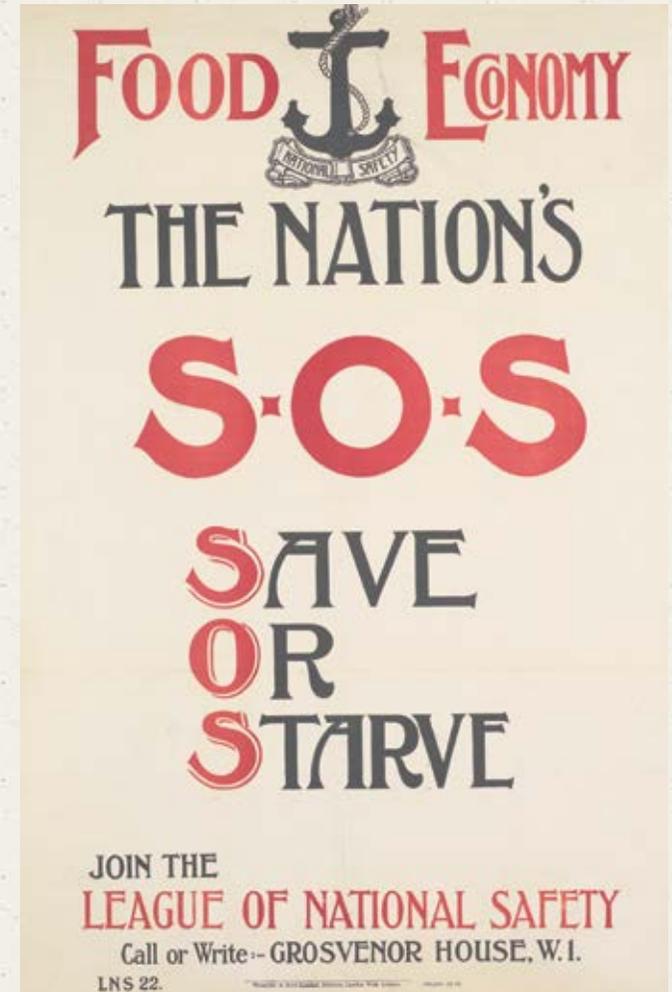
Up until late 1916, there were two committees to advise the Board of Agriculture: the Cabinet Committee on Food Supplies and the Agricultural Consultative Committee. The Board of Agriculture, which later became the Ministry of Agriculture, Fisheries and Food (MAFF), was established

"On 18 August 1914, the Government called on farmers to increase the production of food and the area of agricultural land under wheat and cereal production"

under the Board of Agriculture Act 1889. Asquith's Government realised that placing price controls on imports would likely lead to a diversion of supplies away from Britain. Its dependence on imports left it unable to take control of the country's food supply.

On 18 August 1914, the Government called on farmers to increase the production of food and the area of agricultural land under wheat and cereal production. It asked farmers to commit to what was, at the time, a more labour intensive and financially precarious production system without any support or protection.

At the same time, Government did not want the number of livestock to decrease and it wanted to avoid the slaughter of immature and breeding stock to protect meat supplies. However, a large proportion of animal feed was imported and the Government wanted cereals prioritised for human consumption. Available animal feed was prioritised for the dairy industry and horses that belonged to the War Office. This meant that there was a reduced amount of feed available for other livestock.



Numerous posters were produced by The League of National Safety to encourage consumers to save food and avoid wasting supplies at all costs. Food economy became a top priority for the Government. ©IWM

TIME TO ACT

Realising that Britain was not producing enough food to feed the nation, the Government continued to look overseas and forge new contracts for supplies from across the world.

The Board of Trade secured new contracts on 28 August 1914 for meat supplies with Australia, New Zealand and South America. It also began to build up a reserve of wheat and control the Indian grain crop.

The war continued past Christmas but still the Government was slow to react to the potential threat to food security.

Asquith's Government appointed a new President of the Board of Agriculture in May 1915. Lord Selborne was a forward thinker and a strong advocate of increasing domestic food production and offering guaranteed prices for cereals. He took steps to assess how the country could increase food production assuming that the war continued past the 1916 harvest. He appointed a departmental committee in June 1915.

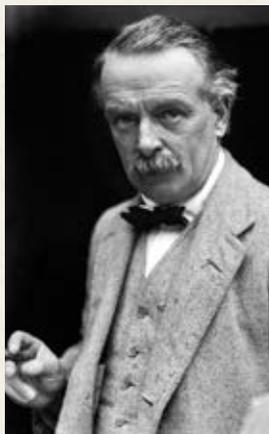
Lord Milner, the chair for the England committee concluded that 'the only method of effecting a substantial increase in the gross production of food in England and Wales for the harvest of 1916 and later consists in restoring to arable cultivation some of the poorer grassland that has been laid down since the 1870s'.

By September 1916 submarine warfare began to increase and the rate of inflation along with it. The German U-boat campaign was beginning to have a significant impact on food supplies. On 9 October 1916, the Royal Commission on the Wheat Supply formed and government held a memorandum on food supplies. The War Office made the next move introducing guaranteed prices for Irish oats on 24 November 1916 to protect the food supply for horses.

A change in government saw a change in attitude and food policies.

"The only method of effecting a substantial increase in the gross production of food in England and Wales for the harvest of 1916 and later consists in restoring to arable cultivation some of the poorer grassland that has been laid down since the 1870s"

LORD MILNER



David Lloyd George.
UK Prime Minister
1916-1922

On 7 December 1916, a coalition government came into power with David Lloyd George as Prime Minister and Rowland Prothero as the new President of the Board of Agriculture. The Ministry of Food was created in December 1916 under the New Ministries and Secretaries Act 1916. Lord

UK Prime Minister Lloyd George visits troops



Devonport was appointed Food Controller to regulate the supply and consumption of food and to stimulate domestic food production.

In 1917, a Food Production Department was established by the Board of Agriculture to manage the distribution of agricultural inputs such as labour, feed, fertiliser and machinery to increase the output of crops.

Replacing lost labour proved difficult as many of the men working on farms had enlisted; the Board and the War Office had to cooperate. In 1917, the War Office released men to help with the spring cultivation and harvest and the Women's Land Army was formed to provide extra labour on farm.

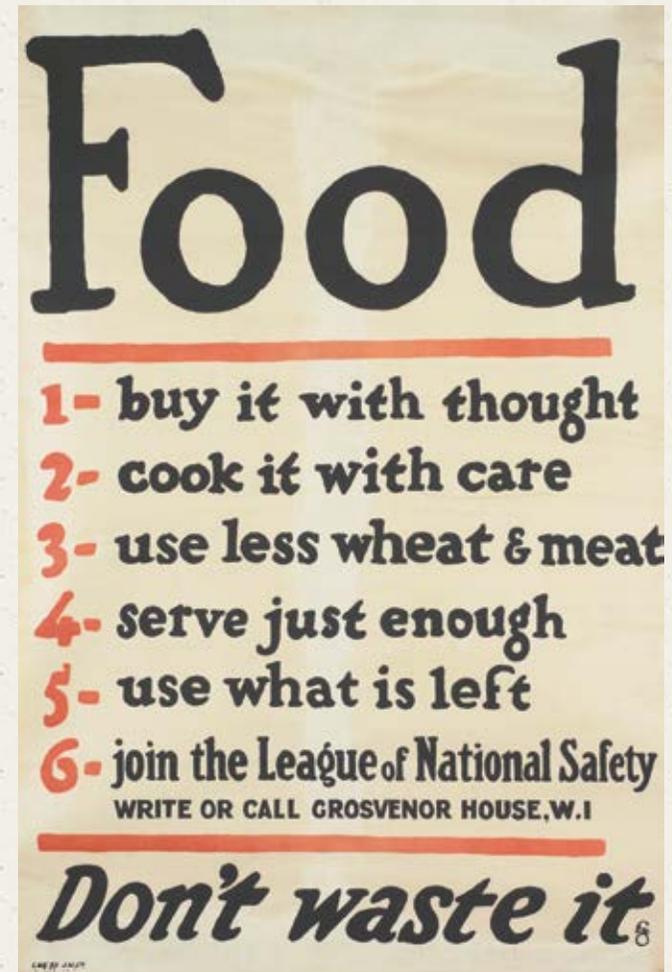
THE PLOUGHING UP CAMPAIGN

In 1917, the Corn Production Act was implemented guaranteeing minimum prices of wheat and oats. A minimum wage was specified for agricultural workers and established the Agricultural Wages Board to ensure stability for farmers and farm workers. Government stopped looking overseas for solutions and policy shifted towards increasing the output of domestic food production and aimed to reduce the dependence on imports. To help with a lack of labour the Ministry of Munitions became responsible for the production and distribution of agricultural machinery in a bid to increase the number of motor tractors used on farm. As a result of the Industrial Revolution, the Army had increased demands on industry as the new age of warfare meant using metals, chemicals and railways for transportation which contributed to delays in the distribution and manufacture of agricultural machinery.

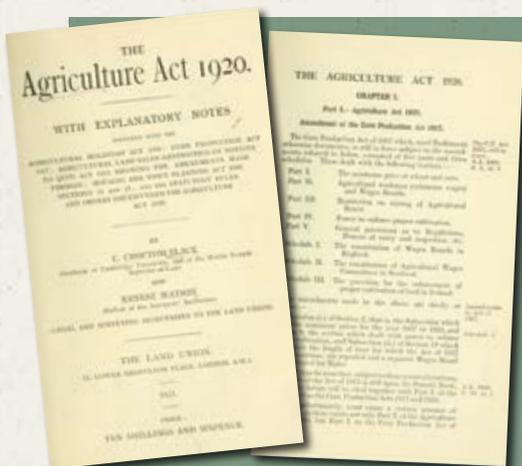
In June 1917, Lord Davenport resigned as Food Controller and was replaced by Lord Rhondda. It was not until 1918 that compulsory rationing was introduced to manage the distribution of food. By 1918, there were government controls placed on almost all aspects of farming; the Food Controller bought all essential food supplies and the Corn Production Act guaranteed prices for farmers.

"By 1918, there were government controls placed on almost all aspects of farming; the Food Controller bought all essential food supplies and the Corn Production Act guaranteed prices for farmers"

Overall, the ploughing up campaign was a success with around 2.5 million acres of pasture turned over to arable production. Farmers rose to the challenge and were able to increase their output of vital crops such as wheat, oats and potatoes despite labour, feed, machinery and fertiliser shortages.



Food waste and food economy were of high importance during the war ©IWM



THE GREAT BETRAYAL

The Corn Production Act had guaranteed prices for the next five years which was due to be passed in the Agriculture Act, 1920 with four years' notice if parliament intended to abolish these Acts. In 1920, with the war over, world agricultural prices fell rapidly and the Government decided to repeal this protective legislation in 1921 to minimise the cost to the Exchequer. This abandonment of the four years' notice written into the Agriculture Act, which was designed to protect farmers after the war, was instantly referred to by farmers as "the great betrayal".

The Government's response was part of a process of retrenchment with cuts in government expenditure taking place across a wide range of sectors.

FOOD PRODUCTION

Britain had been in a secure position during the early 19th century when enough grain was produced to feed Britain's population and more. By 1914, policy makers had neglected agriculture for seventy years leading to agriculture's decline as part of the national economy. Britain had become dependent on imports for more than 60 per cent of food supplies including fuel, animal feed and fertilisers.

The nation was directly dependent on other countries to feed itself, including Germany and the Austro-Hungarian Empire.

Refrigeration and the Industrial Revolution had been instrumental in changing the distribution and transport of food. This meant that food from abroad was more accessible; the Government believed that if the Royal Navy could keep the shipping lanes open, there was no need to stimulate domestic food production.

This was in direct contrast to policies adopted by other countries such as Germany and mainland Europe. Historian P. E. Dewey estimated that Germany was 90 per cent self-sufficient whereas Britain was at 40 per cent. Germany had a higher proportion of arable land in comparison to

STAPLE FOODS 1914

- BREAD
- MEAT
- BUTTER
- SUGAR
- MILK
- CHEESE
- JAM
- EGGS
- BACON

RATIONED BY 1918

- BREAD
- MEAT
- BUTTER
- SUGAR
- CHEESE
- JAM
- BACON

"1916 was a bleak year; severe weather resulted in a poor harvest leaving Britain with six weeks' worth of wheat"

Britain where agriculture had shifted towards livestock production due to changes in government legislation and its free trade policy.

On August 4 1914, Britain had enough wheat to last for 125 days. Government was importing around 78 per cent of wheat and flour along with 40 per cent of meat.

The outbreak of war on August 4 1914 should have prompted a change in attitude towards food security. Britain was not in a position to be able to feed itself. 1916 was a bleak year; severe weather resulted in a poor harvest leaving Britain with six weeks' worth of wheat. The resulting shortage of food and the news from the Battle of the Somme brought the war home to most families.



Photo: The Great Food Club Magazine

It took a crisis to bring food security into debate. Government had made a major miscalculation on food supplies at the beginning of the First World War and history was to repeat itself by the Second World War. Britain was over-reliant on imports.

Decisions made during the First World War began the refreshed and revised approach to food production in Britain. Food prices rose by around 130 per cent and meat was in short supply after imports had fallen from 40 per cent to just 12.5 per cent with the majority allocated to the armed forces. Food queues and the threat of the country being starved into submission signalled the need for change.

It was not just the supply of wheat that had been affected by war. Agricultural production had fallen in continental Europe by around a third. The Government had to form new contracts to secure goods from all over the globe. It took this crisis to begin to appreciate the value of agriculture.

FEEDING THE MANY

A change from Herbert Henry Asquith's Liberal Government to David Lloyd George's Coalition Government in December 1916 resulted in a more reactive approach. The Government introduced the Corn Production Act in 1917 guaranteeing minimum prices for oats and wheat and began to push the ploughing up campaign. This campaign would see farmers convert pastures to arable production to increase home production of staple foods such as wheat, oats and potatoes. It was a phenomenal task considering the shortages that farmers were facing.

Almost a third of male farm workers had gone to war along with mechanics and blacksmiths, work horses had been requisitioned, machinery was limited and fertilisers and feed were in short supply.

War Agricultural Executive Committees were formed in each county to assess these shortages and distribute labour and supplies to farms in need of assistance. These committees would report on how to increase production in each county.

The labour shortages were addressed using the Women's Land Army, experienced soldiers and prisoners of war.

Privately owned motor tractors were requisitioned by the committees and along with imported tractors from America, were allocated to farms in the area. This was with difficulty due to transport delays and the tractors themselves were in their infancy.

The World Food Summit of 1996 defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life".

Any area that could be turned over to food production was used; back gardens, allotments and even the gardens at Buckingham Palace. In 1916, it became illegal to consume more than two courses for lunch in a public place or to have more than three courses for dinner.

"However much agriculture has been neglected in the past, that is not likely to be so in the future. It is coming to the front, and it is being recognised that it is one of the principal industries, if not the principal industry, of the country."

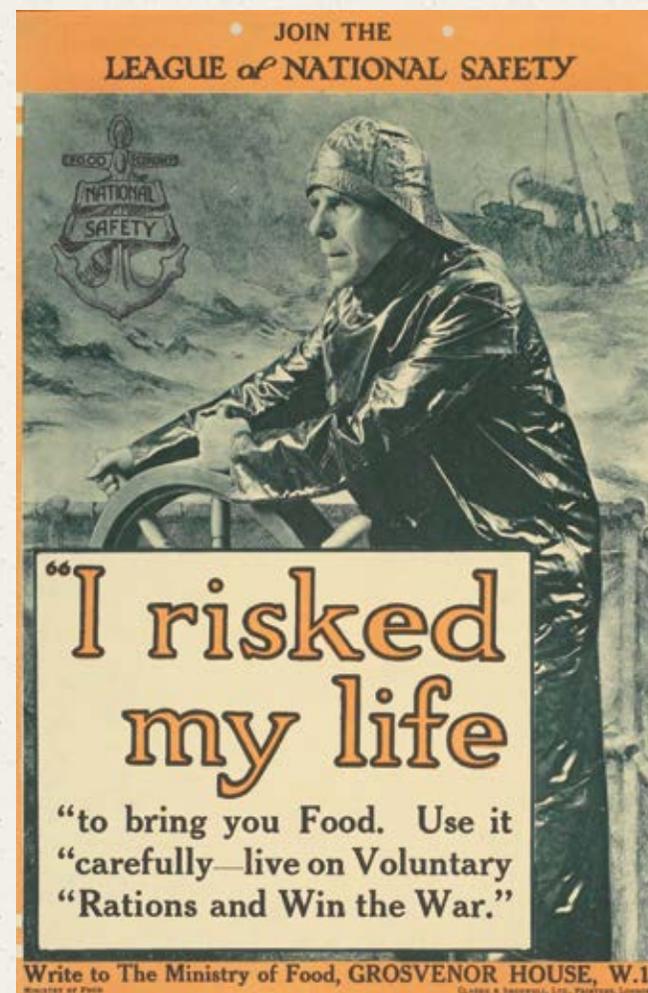
**COLIN CAMPBELL,
NFU PRESIDENT, 1916**

The Government introduced a voluntary code of rationing in February 1917, where people would limit themselves on what they ate; an initiative endorsed by the Royal Family.

Voluntary rationing was, however, largely ineffective; food remained unevenly distributed and some poorer communities became malnourished.

Compulsory rationing was gradually implemented from December 1917 to try and distribute what food the country did have as evenly as possible. The first foods to be rationed were wheat, meat and sugar. Rationing continued for the remainder of the war and for some years afterwards. Compulsory rationing was a success as the lowest that the calorific value consumed fell was four per cent in 1917. Britain was recognised as a success due to the supply of food remaining almost intact for the duration of the war. Lessons were learnt and compulsory rationing was applied once again in the Second World War which ensured there were no food shortages.

With food such a precious resource, wasting edible food was inconceivable. If someone was caught wasting food fit to eat, or abusing the rationing system, they could be fined or even imprisoned.



The Government produced posters and leaflets to encourage voluntary rationing in 1917 ©IWM

The National Food Economy League released publications with the objective of conducting an educational campaign on a wide scale 'for the prevention of waste of the National Food Resources'. This work also prompted books that advised on the nutritional value of food and the best method of cooking to ensure the nutritional value was met.

LOSS OF LABOUR

Registering for military service was voluntary under what was known as the 'Derby Scheme'. However, from the outbreak of war, men were encouraged to sign up for military duty with a heavy recruitment campaign and regular publications of propaganda.

Government was reluctant to apply 'essential' status to agriculture as it had done to mining and munitions. These industries had been deemed essential to the war effort and therefore the Government ensured that the labour supply was maintained. As long as the food supply was maintained with imports the Government saw little need for action.

A National Registration Act was introduced in 1915 which listed men still available to sign up and these men were targeted. In May 1915, recruitment officers were instructed not to accept skilled farm workers so that they could remain on the farm to protect Britain's food supply. Government was beginning to recognise that with the war continuing past Christmas, food supplies must be considered. Farming was emerging as an increasingly vital part of the war effort.

"In May 1915, recruitment officers were instructed not to accept skilled farm workers so that they could remain on the farm to protect Britain's food supply"

By autumn 1915, some of these skilled labourers became 'starred' which made them exempt from military duties. 'Starred' workers were in positions deemed essential to the war effort. Many of these protected skilled workers felt patriotic enough to attest their willingness to serve but were usually granted exemptions.

CONSCRIPTION

Public opinion that 'fit' men should sign up for active service meant that men who had not volunteered were stigmatised and often handed a white feather and branded as cowards.

The Military Service Act came into force in January 1916 bringing in conscription due to the loss of men on the front line. It required all unmarried men aged 18-41 to enlist and increased the age limit to 51 in April in the hope of recruiting more men. They extended their reach to include married men after May 1916.

Agricultural fairs were heavily targeted by recruitment officers and a significant number of men signed up. Historian P.E. Dewey reported that farms saw a loss of 170,000 men aged 18 and over between 1914 and 1918, around 17.5 per cent of the workforce. A lot of skills and experience were lost with these men and when Britain was faced with food shortages from 1916 the Government recognised that it needed to provide assistance for farms.

This image of Lord Kitchener was used to encourage men to sign up for Military Service

Photo: Alamy

To make up for this loss of workforce the War Office supplied farms with prisoners of war and British soldiers from 1917. By 1918, there were 14,000 prisoners of war and 66,000 soldiers employed in British agriculture. They also began to send experienced ploughmen back from the front line to assist as this was a vital and skilled job. However, many of these men had been injured and yet more labour was needed.



Women and soldiers helped farmers with cultivating and harvests increasingly throughout the war



WOMEN IN WAR

Nearly nine million men fought in the British Army during the First World War. The role of the women left behind was vital to protect Britain from being starved into submission.

In 1914, women began to form voluntary organisations designed to identify opportunities as part of the war effort. The Women's Defence Relief Corps and the Women's Farm and Garden Union formed in 1914, creating agricultural divisions and training courses in farming. This involved developing skills and expertise in areas such as keeping poultry and livestock, dairying and helping with the harvests.

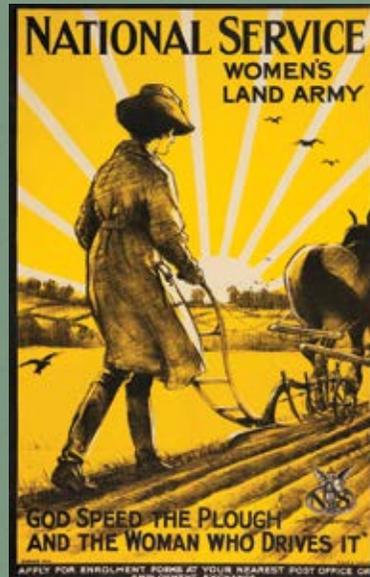
The first Women's Institute (WI) in Britain was set up in 1915. The WI was formed to encourage countrywomen to revitalise rural communities and become more involved in the production of food during the First World War.

Women could not sign up for military duties but they could do their part for the war effort in munitions factories or on farm. Neither of these was an easy feat, both involved long hours and hard, manual labour. Women countered the bias and performed the same tasks as men.

Women started to be taken seriously by the British Government and the wider society as they began to realise that the nation needed to use thousands of British women that wanted to do their bit for their country.

By 1915 the Board of Agriculture developed a scheme for training women to do agricultural work in agricultural colleges across the country. This training focused on milking and 'light' farm work. The courses lasted for 25 weeks and 218 women signed up, 199 found work afterwards. On top of this many women took it upon themselves to form women's associations to find work in agriculture. There were also some private organisations such as the Women's Defence Relief Corps which was taken over by the Board of Agriculture in 1917.

THE WOMEN'S LAND ARMY



©IWM

This led to the formation of the Women's Land Army (WLA) in 1917. The aims of the WLA were to recruit women for agriculture, break down the anti-feminine bias and organise 'gangs' for farm work.

If women were working on farm for over 30 days, they were entitled to wear an armband of military appearance to demonstrate to others that they were doing their duty for their country; the armband was khaki with a red crown.

By 1918, there were more than 223,000 women in agriculture with 8,000 working in the WLA performing the same tasks as men to continue producing food for Britain.

THEIR LEGACY

It was not just the lives of the Land Girls that would change after the war. Women had to fill the labour gap in other industries left by the millions of men fighting on the front line.

For the first time, new opportunities became available for women to work in previously male professions such as the police, engineering and the railways.

Without the women of Britain, the nation could have starved. As devastating as the war was it acted as a catalyst for equal opportunity. Women had the chance to show that they were more than capable of undertaking the same roles as men in agriculture.

In 1918, the Representation of the People Act enfranchised 8.5 million women, which gave women a voice in government for the first time. The voting age was set at 30 for women, as opposed to 21 for men. Following this, in 1919, the Sex Disqualification (Removal) Act made it illegal to exclude women from jobs because of their gender. However, this legislation was at odds with other legislation that promised ex-servicemen their jobs back when they returned from war. The result was that many women in rural communities struggled to find work after the war and sought work elsewhere and in cities. Even though the post-war economic hardships delayed the social changes women may have hoped for, there was a lasting effect which helped to shape the lives of women for years to come.

Women were trained on farm to perform the same tasks as men ©IWM



HORSES: OUR GREATEST ALLY?



The First World War saw a period of change in the way the UK farmed and has had a lasting impact on how we farm today. Pre 1914 farming was incredibly labour intensive and required a number of skilled labourers to perform tasks that one worker can do now.

The horse was the main source of power in the early 20th century. The majority of equipment used on farm during the war was developed during the 19th century and was horse-drawn or hand-held.

Historian P. E. Dewey estimated that in 1913, there were more than one million horses working on farms. When war commenced in 1914, the British Army possessed only 25,000 horses.

The War Office needed to source more horses and they began to requisition another half a million to go to the front. This meant that thousands of farming families in Britain had to say goodbye to their work horses and ponies, which were sent to endure a life on the front line. Horses were mainly used for logistical support as they were able to travel through deep mud and over the rough ground

The First World War was the last major conflict to use horses on a mass scale. It was the dawn of modern warfare; machine guns and tanks were taking the front line. The loss of horses on farm meant that farmers had to adapt and find alternative sources of power.

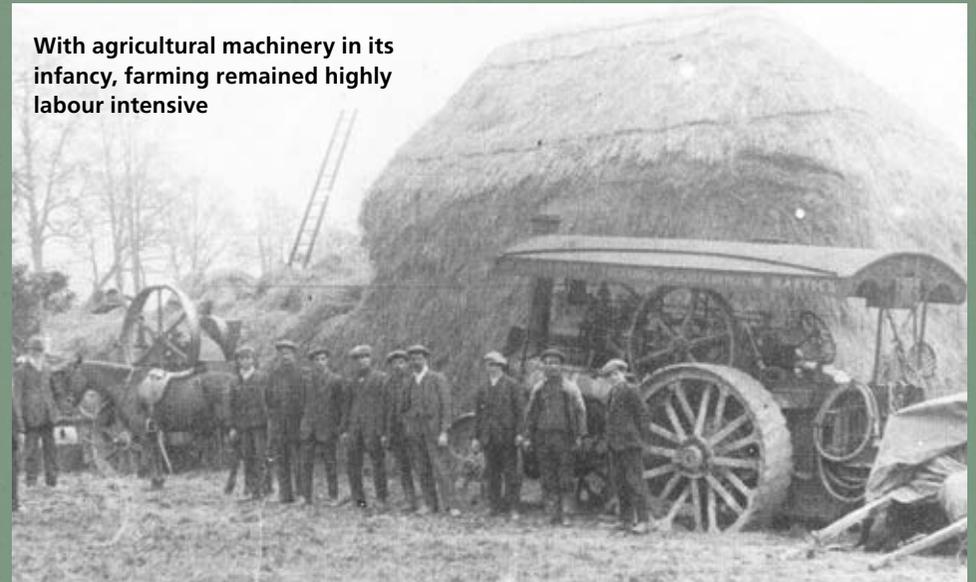
THE CHANGING FACE OF FARMING

The early 20th century saw a variety of power sources used on farm such as, labourers, horses, steam engines and the early beginnings of the motor tractor.

By 1914, British farming was the most highly mechanised of all European agricultural systems. Horses were still relied upon, but farmers had to find more innovative and efficient methods to cope with the reduction in numbers during the war. They began to use three-horse double furrow ploughs instead of a two-horse single furrow to increase the area of land they could plough in a day. Farmers used sheaf carrying appliances at harvest to enable the binder to drop sheaves in fours or fives instead of scattering singly. Dewey reported that in some cases, this meant they could gather 16 acres of oats in a day instead of six.

Dairy was the least mechanised sector with the majority of milking still done by hand but there were experiments being carried out into mechanisation. Technically, it had a way to go, but on the eve of the outbreak of war, more than 80,000 cows were being mechanically milked.

With agricultural machinery in its infancy, farming remained highly labour intensive



"By 1917, almost half of steam-ploughing sets were lying idle due to the loss of farm workers to the war"

Steam engines were used for ploughing and required a skilled operator. Farmers used an indirect method with a plough attached to a cable powered by the steam engine. It was not suitable to use a large steam engine for direct ploughing and cultivating as the machine was too heavy and could not work effectively in the fields.

By 1917, almost half of steam-ploughing sets were lying idle due to the loss of farm workers to the war. There was also a lack of spare parts, mechanics and coal. Government responded by issuing a letter relating to the recruitment of agricultural workers signed by the President of the Board of Agriculture and the Secretary of State for War. The Government committed to return soldiers who had been employed in steam cultivation before the war as soon as they could be traced and to send as many soldiers as possible to assist with spring cultivation and sowing.

In the spring of 1917, around 11,500 men were provided and in addition to this, another 12,500 men from the Home Defence Force were granted leave until the end of April to assist with the spring sowing. An order issued on 12 March 1917 required all skilled ploughmen in the Home Forces to be granted leave. By the first week in April 1917, around 40,000 soldiers were at work on the land.

A NEW ERA

The motor tractor was still in its infancy and it's unlikely that there were more than a thousand in operation pre war. The majority of models used on farm were US models including the Titan and later, the Fordson. British models included the Ivel and the Saunderson tractor.

All tractors were on iron wheels, with cleats for rough ground, if they were used on the road, a band was placed around the wheels. The tractors would have to be cranked by hand to start.

Some of the US models were unsuitable for British terrain and the chain linkage system was dangerous with numerous reports of machines tipping up on uneven ground.

On November 24 1916, the Ministry of Munitions took control of the supply of agricultural machinery. The US models were still dominating the market and Britain had a growing dependence, particularly on the Fordson tractor. There were shipping difficulties and delays in supplying Britain with machinery.

Following the Corn Production Act, in May 1917 the Government initiated a tractor scheme. It spent \$3.3million on US models; this was intended to assist farmers who had lost a number of work horses. In addition an order was placed for 400 British Saunderson tractors which were transported using the railways to rural communities. The Ministry had also requisitioned privately owned tractors and the War Agricultural Executive Committees would redistribute these assets. If farms were short of resources, they could apply to the committee for assistance. It was not a direct success as there were delays in shipping and the distribution was often uneven and ineffective. It did however, lead to further development over the coming years after the war such as the invention of

The Jones family bought the first British Saunderson Tractor in Shropshire



the three-point linkage system in 1926 by Harry Ferguson. Ferguson had previously been working on motor cars but took an interest in agricultural machinery during the First World War. He travelled around Ireland training farmers on how to use motor tractors and experienced the flaws first-hand. He formed Massey-Ferguson in 1953; it remains one of the biggest names in farming equipment across the world.

Dewey estimated that farmers spent on average £3.2 million a year on machinery and implements. Most ploughs were home produced but the market was dominated by US models. Machinery prices rose by over 50 per cent by the end of 1916 along with spare parts due to the decline in blacksmiths who could repair the equipment.

By the end of the war, more than 6,000 motor tractors were in operation in Britain. Farmers adapted to develop more innovative and efficient methods of production in a very short space of time. This achievement led to the eventual mechanisation of farming.

THEN AND NOW



Oats were an important biofuel for farmers during WW1. Production increased from **2 MILLION TONNES** in 1914 to **2.9 MILLION TONNES** in 1918 to provide fodder for war horses. We now use a variety of biofuels, including rapeseed oil, which we produce **2.1 MILLION TONNES** of a year



Loss of horses led to more mechanisation on farm. The UK Government invested **\$3.3 MILLION** in US models and placed an order for 400 British Saunderson tractors. By 1918, we had around **6,000** tractors in operation. Today, we have more than **310,000** licenced tractors



In 1914 farmers could plough **1 ACRE A DAY** using a two-horse single furrow plough or a three-horse double furrow plough.

Now, farmers can plough **1 ACRE IN LESS THAN 15 MINUTES** with a high horse-power tractor and large plough

In 1910 we were producing
1 TONNE OF OATS PER HECTARE

Today we produce
6.7 TONNES PER HECTARE



During the war, households were fined for wasting food that was 'fit to eat'. Today, consumers waste **15%** of edible food and drink



2014 was the wettest winter since 1766, according to the Met Office. June 2014 was the ninth warmest June since 1910

Thanks to developments in the poultry sector during WW1, we have moved from seasonal laying to enjoying British eggs all year round



In 1914 we produced **55,000 TONNES** of eggs.
In 2013 we produced **1.7 MILLION TONNES**



The war led to the loss of approximately one third of the male agricultural workforce meaning an additional **98,000 WOMEN** were given the opportunity to work on farms across the country



In 1914 we produced **2.8 MILLION TONNES** of potatoes.
Today we produce **5.7 MILLION TONNES**



Agricultural production of wheat rose from **1.7 MILLION TONNES** in 1914 to **2.4 MILLION TONNES** in 1918. Today, we produce **11.9 MILLION TONNES** of wheat



Refrigeration was in its infancy so transportation meant that all milk was home produced. In 1914 we produced **4 BILLION LITRES**. Today we produce **13.5 BILLION LITRES**



In 1914 it would take one hour to hand milk **10 COWS**. Today, thanks to mechanical milking, **60-100 COWS** can be milked in an hour

Thanks to genetic developments like Mendelism and the Punnett Square during WW1, breeding modifications to plants and animals now take around **7 YEARS** instead of **100 YEARS**

SELF-SUFFICIENCY

WHEAT



19%
IN 1914
83%
IN 2013

MUTTON AND LAMB



60%
IN 1914
100%
IN 2013

BEEF AND VEAL



68%
IN 1914
83%
IN 2013

EGGS



50%
IN 1914
87%
IN 2013

SUGAR BEET



0%
IN 1914
60%
IN 2013

Sources:
Defra, *Agriculture in the UK*, 2013,
Dewey, P.E. *British Agriculture in the First World War*, Routledge,
London Met office

THE FUTURE...

The First World War changed the face of British farming and food production, forever. The lessons learned by farmers, growers, policy makers and society continue to influence the decision making process in the 21st century.

Yet the food production challenge is dynamic – as old problems are solved, new ones arise and must be overcome. Increasingly the decision makers in the EU exercise legislative powers on farmers across Europe and today we have some of the safest food production systems and highest animal care in the world.

"British farmers and growers are ready and able to rise to the food production challenge of today, much in the same way as their ancestors from 100 years ago"

British farmers and growers are ready and able to rise to the food production challenge of today, much in the same way as their ancestors from 100 years ago. And recent food price spikes and food shocks, such as those felt on global commodities in 2008 or the horsemeat scandal of 2013, together with a growing population both at home and across the world, mean that food production and food security are once again at the top of the national agenda.

As the farmers from the First World War demonstrated, with a legislative framework that supports agricultural production, access to the best science and technology, and leading land management and environmental stewardship, farming and food production can thrive.



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