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Something went wrong. Wait a moment and try again. Knowledge BaseNews and insights Agriculture As the UK moves towards its EU exit, the focus on food security and farming has become ever more intense. Simultaneously, increasingly frequent news items about climate change and its environmental effects concentrate minds on the importance of sustainability. The main areas of operation within the UK farming industry are: Arable Livestock (beef and lamb) Dairy Contact farming (providing general support services to farms) Impact of farming through the years Towards the end of the twentieth century, the traditional reliance on chemical pesticides and fertilizers, biotechnology, monocultural crops and heavy government subsidies made food plentiful and cheap. However, the environmental and social costs are now becoming painfully clear – land erosion, depleted and contaminated soil and water resources, loss of biodiversity, deforestation, labour abuses, and the growth of industrial-sized farming (with industrial styles of production) and the corresponding decline of the traditional family farm. Fundamentally, sustainability means farming techniques that protect The environment Public health Communities Animal welfare Sustainable agriculture allows for the production of healthy foods without destroying the ability of future generations to do the same. The key areas of activity are: Crop rotation Crop diversification Use of technology and data Recycling (crop waste and animal manure) The most sustainable agriculture can be defined in many ways, but ultimately it seeks to sustain farmers, resources, and communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices and methods that are profitable, environmentally sound, and good for communities by promoting farming practices are profitable, environmentally sound, and good for communities by promoting farming practices are profitable, environmentally sound, and good for communities by promoting farming practices are profitable, environmentally sound and good for communities by promoting farming practices are profitable, environmentally sound and good for communities are profitable, and good for communities are profitable, and good for communities are profitable, and good for c environment by maintaining soil quality, reducing soil degradation and erosion, and saving water. In addition to these benefits, sustainable agriculture also increases the biodiversity of the area by providing a variety of organisms with healthy and natural environments to live in. The UK leaders in sustainable agriculture There are a large number of farms in the UK forging ahead with strong and innovative models of sustainability. The list below is therefore only a small sample of certain award-winning farmers and how their innovative models of sustainability. The list below is therefore only a small sample of using technology and information from data to enhance production and ensure it is more sustainable. He is doing five Yield Enhancement Network (YEN) trials this year. These indicators analyse tissue and soil, therefore bettering their understanding of weaknesses such as a lack of nutrients. Thomas Pemberton, Pemberton Dairies, Birks Farm, Lancashire This young dairy farmer has proved himself as a digital revolutionary. His video, intended to show consumers how to use their newly installed raw milk vending machine went viral on social media and YouTube within 2 days. Encouraged greatly (and not a little surprised!), he, therefore, started producing more videos and set up a YouTube channel ('Tom Pemberton's Farm Life') showing the everyday life and activities on his farm. This online profile has shown how to effectively connect farming and the general public (especially young people). This innovation doesn't address specific sustainable agricultural practices but may help ensure the preservation of small-scale, family farming itself. If this online fan base is encouraged to think of a future in agriculture, his work will have been invaluable. As he comments, 'These days it is easier to watch than read, and farmers have never had such an opportunity to promote the amazing things they have been lost as well as growing grains with rich nutrient content. They are working to re-localise cereal production, working across the cereal supply chain (from farmer to baker) to make it more transparent and sustainable. Hands Free Hectare (Shropshire) The aim of Hands Free Hectare is to use only robots and drones to grow crops. This project is the first of its kind in the world - the ultimate aim is to drill, tend, and harvest a crop without operators on the machine or agronomists in the field. Early results, including a harvest of winter wheat, have been positive. The farm hopes to improve the accuracy of its machinery, thus improving the yield next year. Environmental and social costs are now becoming painfully clear - land erosion, depleted and contaminated soil and water resources, loss of biodiversity, deforestation, labour abuses, and the growth of industrial-sized farming (with industrial styles of production) and the corresponding decline of the traditional family farm. How do you make a farm or ranch more sustainable? There is no single answer, but SARE's 8 episode "What is Sustainable Agriculture" animation series highlights some common practices farmers and ranchers across the country use to improve profitability, quality of life and environmental stewardship. Episode 1 takes a look at the whole farm approach to sustainability and illustrates how cover crops, conservation tillage, ecological pest management, grazing, water conservation and other practices can improve the health and resilience of production systems. Every day, farmers and distribute food, fuel and fiber sustainably. While these strategies vary greatly, they all embrace the following broad, long-term goals: Productivity: Grow enough food and fiber to meet humanity's needsStewardship: Enhance the quality of the land, water and air; and make the most efficient use of nonrenewable resourcesProfitability: Maintain the economic viability of farms and ranchesQuality of Life: Promote the resilience and wellbeing of producers, their families and society as a whole A Whole-Farm Approach There are almost as many ways to reach these goals as there are farms and ranches in America. One thing sustainable producers have in common is they look at their farm or ranch from a holistic perspective and develop an integrated management plan that uses principles from nature. Reducing tillage and careful application of on-farm nutrient sources, for example, build soil organic matter; energy costs are reduced when fuel is produced from waste or renewable sources; pests are controlled by plant and landscape diversity; income is boosted by more efficient use of on-farm resources—and the list goes on. Learn about the integrated techniques and production benefits associated with improving soil health. A Sampler of Best Practices Here are some of the ways farmers and ranchers are making their operations more sustainable. Marketing. A diversity of marketing techniques can make a farm more resilient to market fluctuations or unexpected production challenges. Consider creating a strong brand identity, studying your potential markets, processing value-added products, and using a variety of sales channels, such as direct marketing, sales to retail and institutions, and aggregators. Social resilience. Agriculture is both hard work and a way of life, and it's critical that our farmers, farm workers and farm families are thriving. Health and well-being, the next generation of producers, community engagement, innovative business management. There's not much that troubles farmers and ranchers more than weeds, insect pests and diseases. The ecological strategies producers use to limit pest damage include enhancing the biodiversity of the farm, using practices that create a healthy crop habitat, applying pesticides carefully and as a last resort, and reducing off-farm inputs. Rotational grazing and pasture management. Sustainable livestock operations come in many shapes and sizes, but they have one thing in common: They carefully manage their livestock on rangelands and pastures in order to simultaneously maintain the health. Soil conservation practices, such as strip-till and no-till, help prevent soil loss from wind and water erosion. Conservation tillage systems also help minimize soil compaction, conserve water and store carbon to help offset greenhouse gas emissions. Cover crops and soil health. Growing plants such as rye, clover or vetch after harvesting a cash crop can provide multiple benefits, including weed and insect suppression, erosion control, carbon storage and improved soil health. Because these benefits usually result in a cost saving in a few years or less, cover crops are now grown on millions of acres across the country. Discover a wealth of cover crop information. Nutrient management. Well-managed and properly applied on-farm nutrient sources—such as manure and leguminous cover crops—build soil, protect water quality and reduce purchased fertilizer costs. On-farm energy conservation and production. Farmers and ranchers are using energy-saving devices, wind turbines and solar power, while also learning how to grow and process their own fuel. These practices not only make farm operations more profitable, clean and efficient, they help reduce dependence on foreign oil and reduce greenhouse gas emissions. Climate resilience. In many ways, the principles of sustainability work as strategies for managing the risks associated with erratic weather and climate change. An emphasis on soil health in both crop and livestock operations, crop rotations and increased biodiversity, strong community ties, and diversified products and sales channels are all examples of how we can make farms and ranches more resilient in a changing climate. Find in-depth information on these topics and others in Resources and Learning. Our Emphasis on Farmer-Driven Research Because no two farms or ranches are exactly alike, it's not always easy to know how principles and practices of sustainability might work from one operation to the next. The expertise of producers is invaluable when coming up with innovative, practical and sustainability might work from one operation to the next. The expertise of producers is invaluable when coming up with innovative, practical and sustainability might work from one operation to the next. takes place on working farms and ranches, and that engages producers as valued collaborators. Visit our database of project reports to learn from the experiences of the thousands of SARE grantees since 1988. In addition, we publish these practical research guides for scientists, Extension professionals and producers: How to Conduct Research on Your Farm or Ranch (bulletin) Systems Research for Agriculture (book) También disponible en español. Aussi disponible en français. Next A Whole-Farm Approach to Sustainability

