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https://www.100test.com/kao_ti2020/6/2021_2022_2004_E5_B9_B41_E6_9C_c4_6229.htm Industrial Agriculture Must Give Way to Sustainable FarmingFrom Agribusiness Examiner #297 10/29/03By Al Krebs THAYNE COZART: The proclaimed economic and societal benefits of a worldwide industrial agriculture system wouldnt measure up very well when compared to a sustainable agriculture system if an evaluation of the industrial system honestly measured all of its "external costs" against its claimed benefits.That was the primary point driven home by Jules Pretty, professor anddirector of the Centre for Environment and Society at the University ofEssex in England, during a seminar to students and faculty who packed aclassroom at Iowa State University October 20.The topic of Prettys seminar was "Rethinking Agri-Culture as if the RealWorld Matters." The seminar was sponsored by the Energy Initiative of ISUs Leopold Center for Sustainable Agriculture and the ISU bioethics program.Pretty, who also is editor of the Journal of Sustainability, contended that"those who support industrialized agriculture measure its success in narroweconomic terms of food price and availability and tend to ignore its costlyunintended consequences to society and the environment."He added, "They are not being seriously challenged to give a fullaccounting. We are trying at the Centre to change that by scientificallymeasuring or estimating in Britain what we call the externalities ofindustrialized agriculture and also the full benefits of a sustainable agsystem." In the British study,

some of those industrial ag externalities evaluatedwere: water pollution from farm waste, soil nutrients, erosion, andpesticides； loss of landscape and biodiversity； food-borne diseases； airpollution from gaseous emissions； unnecessary transportation costs of food；human dislocation from rural to urban； rural community decline； poor human diets and obesity, and cost of direct government subsidies.In his study, the annual costs of these externalities during the 1990stotaled 1.54 billion pounds (approximately U.S. $2.6 billion). "Britain hadto spend this to deal with the effects of industrial ag, so this cost is ahidden subsidy from the public to polluters," Pretty emphasized.Some of the sustainable ag benefit he tried to evaluate were: landscapeaesthetics, biodiversity, clean water, flood protection, carbonsequestration, rural economy, and community cohesion.The largest value ascribed to a positive benefits from sustainable agpractices was 14 billion pounds (U.S. $23.7 billion) for rural landscapeservices (tourism). In Britain, the annual value for rural tourismoutstripped the total value of all the food produced nearly 10-fold.Harder to measure, but valuable none-the-less, according to Pretty, werewetland benefits for flood protection, waste treatment, and wildlife habitats； energy savings on transportation, and carbon sequestration to reduce global warming. "In determining future world agriculture policies, the keys," said Pretty,"are finding ways to encourage polluters to reduce or pay for the costs ofthe negative aspects of their system, while also finding ways to rewardfarmers for the positive aspects of a sustainable system. I think a carrotmay work better than a stick in many

cases."Pretty sees hope for a gradually shifting world food-production systems from industrialized to sustainable and multifunctional. "Its a myth that theworld cant produce enough food from sustainable, local food systems for its population --- just like its a myth that hunger and starvation are based on world food shortages, when the truth is hunger is based on poverty and the inequities and economies of food distribution," he said.He bases his hope on his groups study of 208 sustainable ag projects in 52nations around the globe. He said nearly nine million farmers --- most inAfrica, Asia and Latin America --- have adopted sustainable ag practices andtechnologies on nearly 30 million hectares (70 million acres), an increaseof 56% in three years. He claimed that in most of these projects, both thequantity and quality of food increased, as well as local economies.To keep increasing sustainable food systems around the world, Pretty listedfive key principles: Substitute management skills and knowledge for costlyinputs； build on-farm biodiversity and soil health； organize intolike-minded groups； add value to commodities, and sell directly toconsumers. "We also need to re-establish our connections to the land and betweenproducers and consumers," he summarized. "We need to rebuild a land and food ethic. And, remember, our choices as consumers make differences to people, nature and communities. The most political decision you make as a consumer is now how you vote, but how and where you buy food."He concluded by stating that so-called "cheap food" is very expensivebecause its paid for in many ways: (1) at the market； (2) through taxes forsubsidies； (3) through environmental cleanup

costs； (4) through treatingdiet-based human health concerns, and (5) through economically diminished rural communities. ；