

"We need to move to a biofuel future"

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Bill Clinton was a strong supporter of biotechnology during his eight years as the President of the US. In fact, he was instrumental in bringing warring scientific groups together to quickly unveil the Human Genome Map in June 2000 from the White House. Six years out of office, Clinton continues to use the tools of biotech and his charm to bring relief to AIDS patients in Africa and other developing countries through a foundation headed by him. Clinton was at the BIO 2006 in Chicago to charm the biotech industry once again and goad it to deliver more to the cause of humanity. Extracts from his wide-ranging remarks at a Special Plenary session of the BIO convention on April 12, 2006 in Chicago.

I think the use of agricultural technology, which uses less fertilizer, takes better care of the soil, increases productivity and could be transferred at low cost through seeds to poor farmers in developing countries is a good thing. We need more people to be able to grow their own food and feed themselves.

I think the most important thing; however, you (biotechnologists) can do is to give us a different energy future. The US is contributing 25 percent of the world's greenhouse gases; that's oil and coal. We have to go to clean coal technology, which is somebody else's job. But we also need to recognize that 70 percent of our oil consumption is in transportation. If you look at America's greenhouse gas consumption, it's basically about a third in transportation, a third in manufacturing and electricity generation and a third in buildings: homes and office buildings, structures of all kinds, and there's a lot to be done in conservation.

But in the fuel area, clearly, we need to go to biofuels. We need to move to a biofuel future. And in my opinion, we need to move to a biofuel future based more on cellulosic fuels than corn, which is a principal contributor to ethanol now. Why? Because the conversion ratio is better. If the goal is not only to have clean fuels but to reduce the use of greenhouse gases, then you want stuff that's lying around anyway, that you didn't have to burn oil to produce in the first place.

And there's all kinds of agricultural waste that can be used. There's wood waste that's lying around. I could have fueled every shrimp boat in the Gulf with the fallen trees and shrubs and other greenery that was all over the ground from Alabama to New Orleans if we'd had the plants available and the distribution mechanisms available. And at \$65 oil, biodiesel for those shrimpers is \$3.00 a gallon (approx. 4.5 liters). With the tax subsidy available in the law now, we could sell them biofuels for about \$1.80. And if you're in the shrimp boat business, the difference between spending 18 percent of your revenues on fuel and 33 percent is the difference between making a living and going broke.

The thing that's important to me about this, is that if we made a serious decision to go to a clean energy future, we would reverse the declining wages problem. Why? Because if we want America to stay in a global economy, where more and more of our jobs are in competition with others, in every single decade and maybe every 5 to 6 years, we have to keep finding a source of new jobs, that are good jobs, that pay well and create strong consumers.

In the next decade, I think biotechnology can replace energy as the main source of new jobs because it'll take us about a decade to reach the full implications of the sequencing of the human genome, so that we will be able to apply it to all kinds of diseases and conditions, develop vaccines, develop preventive strategies, be producing all kinds of products and services that we never even dreamed of before. But first we've got to get the energy thing right, and then in the next decade, if I'm around, I'll be talking to somebody like this about all the things we should be doing to generate all the applications that our understanding of the human genome will make possible.

And in terms of the people who have genuine questions about this, I don't think there's anything inconsistent with beef or organic farming and supporting genetic developments. When I was Governor of Arkansas, we grew 40 percent of America's rice crops and we did a lot of experimental rice development. At our experiments stations, we had over 200 different varieties of rice. Now every time we bred a new variety, it was genetically modified. And in America, as we're becoming more of an immigrant nation, we're genetically modified.

One of the things that we learned when we sequenced the human genome is that all human beings are 99.9 percent the same, all the wars, all the fights, all the hatred between people of different races and ethnic groups was all over one-tenth of one percent of our genetic structure. It makes you see just how silly it is when we think our differences are more important than our common humanity.

I believe that the 21st century will be the most exciting period in human history. I do not believe, that even with the threat of terror and the looming threat of these weapons of mass destructions, I think it is unlikely that as many people will be murdered by crazy politicians as were murdered in the 20th century. Keep in mind, we had two World Wars; two horrible purges in the former Soviet Union; a horrible purge in China, 2,000,000 people killed in Southeast Asia in the slaughter in Cambodia; and a lot of horrible problems elsewhere. In the 90s, 10 percent of Rwanda disappeared in 90 days.

I think we've got a chance to avoid that, but we have to deal with climate change. We have to deal with the security threats. We have to deal with the prospect of global diseases because of globalization; and we have to get the half of the people that aren't part of this group deal into the mix, which is why I was glad to see all the farmers here from developing countries today. In all these areas, biotechnology is going to be critical and all the people like me or Bill Gates or everybody who wants to contribute to the non-governmental sector, everything we hope to do to build a world that will be fit for our children and grandchildren, will depend upon continued advances in biotechnology. Let's not be defensive. Let's not hide the evidence. Let's invite people always to find evidence that something that we're doing, whether it's you, me or anybody else is wrong. But let's stick with the evidence and look to the future.

I think, on balance, it looks pretty good.