

Thank you for giving me the opportunity to speak here today. I have respected and counted on WorldWatch for many years now—in both my own environmental work and as President of the Center—and so it is truly a pleasure to be a part of this important conference.

Reading its reports and data, I think that one of the most critical connections WorldWatch has been able to make is the one between alternative energy and social justice. They are fundamentally intertwined, and today, in our discussion of biofuels, I want to explore that connection a bit more thoroughly.

Today, I will argue that while political and public momentum builds here at home for finding alternative energy solutions to our oil dependency, we must harness that momentum in a way that not only secures our own energy independence but also promotes alternative energy in the developing world.

Yes, we must address the national security and economic threats we face from our addiction to foreign oil, but we must also face the fact that our dependency on oil is the greatest threat to the world's environment and to the welfare of the poorest people on earth.

Our dependency on oil poses severe risks to our global environment as it undoubtedly escalates the threats of global warming.

I'll spare repeating what many in this room already know: that there is broad consensus on the scientific evidence that climate change is real and happening now. But I think it is important to point out that beyond the scientific evidence, it's the world's poorest people—those least responsible for climate change—who are most prone to suffer from its effects.

In part, this is because the world's poor live in areas more prone to natural disasters, drought and disease.

- Consider that 14 countries in Africa are already subject to water stress and within the next 25 years that number will almost double; and
- Between 260 and 320 million people are likely to find themselves living in malaria infested areas by 2080.

Additionally, as we have seen in Bangladesh and the Philippines in the past year—and just recently in Indonesia—the increased frequency and intensity of natural disasters means that poverty ridden communities in remote areas will not receive advance warning...will not have immediate access to relief services...and will not have adequate resources to recover—leaving hundreds of thousands of people to perish.

On top of this, climate change threatens developing communities in particular because they—more than most—depend on natural resources for income. On a broader scale, it will adversely affect poor countries' economies that are dependent on agriculture.

- For example, crop yields in sub-Saharan Africa are projected to fall by 20 percent under global warming;
- As yields fall and demand rises, Africa will become more dependent on expensive food imports. Already the poor in sub-Saharan Africa spend 60 to 80 percent of their total income on food – that compares to approximately 10 percent in the U.S.; and
- Climate change induced famine may displace more than 250 million people worldwide by 2050.

And what I think can only be characterized as a cruel twist of irony, the same communities who stand to suffer from climate change the most, cannot afford the oil we use to generate economic growth and that also generates the pollution that threatens their very survival.

For the poorest countries, energy is not a source of economic prosperity—it is a source of their poverty. And dependence on oil for energy is deepening deprivation in the developing world.

- Consider that oil priced at \$60 per barrel has had a disproportionate impact on the poorest countries, 38 of which are net importers and 25 of which import all of their oil;
- The International Energy Agency (IEA) estimates that for every \$10 hike in the cost of a barrel of crude, the economy of an oil importing country in sub-Saharan

Africa is impacted more than 10 times as much as the United States. As a result, important gains reaped from debt forgiveness initiatives are being wiped out by rising energy costs...

For example, this year Mauritania will spend the equivalent of 30 percent of its total debt write-off on the increased cost of oil in 2006, five times what the government expects to spend on education and healthcare combined. Or consider Ethiopia. This increased cost of oil is equal to four percent of their GDP. To put that percentage in context, Ethiopia spends the equivalent of 2.6 percent of their GDP on health care;

- Given the inaccessibility of oil, it is not surprising that approximately 2 billion people worldwide live without

reliable energy sources, without refrigeration, basic communication, heat, or even light.

For developing countries, then, climate change and our world's energy policies are a continuing source of poverty, oppression and inequality.

Here in the United States, we know we must diversify our own energy portfolio.

It is a national security imperative.

It is an economic imperative.

It is an environmental imperative.

And, fundamentally, it is a moral imperative.

For developing countries in the tropics and sub-tropics, Brazil has also demonstrated a possible competitive advantage from longer and more productive growing seasons—an advantage

that can be realized if we can mitigate the effects of climate change on crops.

Other developing countries in the tropics and sub-tropics have already begun to capitalize on the geographical and economic advantages of biofuels production.

In Mali, where only 12 percent of the 12 million residents have access to electricity, Malian women have started producing oil from jatropha bushes to fuel their generators and vehicles. And last fall India announced a national biodiesel purchase policy to bring one million hectares of land under jatropha cultivation to supply blended diesel over the next few years.

When we consider that two-thirds of the developing world works in agriculture, the potential for biofuels to promote sustainable development is enormous—and it is necessary, since emerging superpowers like India and China are looking for ways to



meet their growing economies' and populations' energy needs. We must ensure that they have the opportunity to leapfrog our industrial energy technology of the 19<sup>th</sup> century and grow in environmentally and economically beneficial ways. Biofuels is one way to do that.

At the national level, producing more biofuels will generate new industries, new technologies, new jobs and new markets—while reducing energy expenditures and allowing developing countries to put more of their resources into health, education and other services for their neediest citizens.

Of the 1.7 million jobs created worldwide in 2004 through the renewable energy industry, almost a million of them were related to biofuels.

While we can ramp up the production, deployment and use of biofuels in the near term and the long term advantages are clear, I

will be the first to admit that we don't know all the answers now, and that there are many challenges to overcome.

First, when it comes to environmental concerns about overusing land and water resources, we must be careful in selecting and cultivating dedicated energy crops to mitigate any adverse impacts. With improvements in fuel efficiency and cellulosic conversion, the Natural Resources Defense Council predicts that by 2050, 48 million acres of switch grass could supply up to 94% of US transportation needs.

And when done with consideration, dedicated energy crops can in fact be beneficial to the environment. For instance in India, jatropha is being used to bring agricultural wastelands back under cultivation.

On top of this, a bio-based economy may also help to reduce poverty and hunger by diversifying agricultural and forestry activities, attracting new farmers, and investing in small and medium enterprises.

In addition to environmental concerns, there are also technological challenges to developing and deploying biofuels to poor communities around the world.

To create commercially viable, widely available and environmentally sound systems for the production of biofuels we must rapidly scale-up our investments in research and development in key areas in the near term.

One of those key areas is environmentally sound and cost-effective technologies to convert a broader array of biomass

feedstocks – both dedicated energy crops and agricultural wastes – into energy.

All countries must contribute scientific and technical expertise to our collective biomass research efforts, but it is the developed world that bears a special responsibility to fully fund and disseminate these critical advances in technology throughout the world.

In addition we must pool our collective scientific expertise, to make further, necessary technological advances, such as creating a single organism that can break down cellulose and turn it into ethanol. Currently, this requires chemical and mechanical pre-treatment, which adds to the energy and cost of making cellulosic ethanol. We must also find a way to create energy crops that are drought-resistant, fix their own nitrogen, and produce more energy per unit of water and land.

These are just a few of the challenges.

We must also work on getting more funding, more diverse types of funding, and gaining global government support for the development and use of biofuels, which is no easy task and could probably take up an entire panel at this conference in itself.

But despite the challenges, bringing biofuels to scale here in the US and in the developing world is possible in the near term. And whatever the costs—political or financial—it's an investment that is in all of our interest. And it is not one we can afford to delay any longer.

Thank you.

