



Convention on
Biological Diversity



Address by

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On the occasion of

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Future Guardians of our Planet*

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Ladies and gentlemen,

Half the world's population now live in cities. By 2030, this number may be as high as 70 per cent. This is worth repeating: twenty years from now, seven out ten people worldwide will be living their daily lives in relative isolation from the countryside, and therefore in isolation from the majority of plant and animal life on the planet.

What are the consequences of our increasing separation from nature? The survey commissioned by Airbus to analyse children's knowledge of nature offers us one answer: children today learn very little about biodiversity. When asked to identify different species from photos, 37 per cent of the 1,500 children surveyed, aged 5-10, could not properly identify a creature as common as a bee – more than a third mistook it for a wasp, and some even confused it with a fly.

Indeed, the percentage of children misidentifying animals and plants from photos was surprisingly high for a whole host of organisms that, one would think, should be easily recognizable. Almost two thirds struggled to tell a toad and a frog apart. More than one in ten got a blue tit confused with a pet budgie. A quarter of youngsters did not know what a beaver looked like: 21 per cent thought it was an otter, while two per cent believed it was actually a badger. 13 per cent of children did not recognize a tulip, with one in ten thinking it was a daisy or rose. 15 per cent were confused by a yellow dandelion, with 4 per cent believing it to be a sunflower. The survey also revealed one probable cause of this lack of knowledge: only 26 per cent of children claimed that they go often go for walks in the countryside.

Should the results of this survey be a cause for concern? Does it matter if young people spend little time outside of an urban environment, and therefore know very little about wild plants and animals? Yes, it does matter. It matters because humans obtain such a wide range of invaluable goods and services from biodiversity – goods and services without which our quality of life would suffer greatly. Indeed it is true to say that our very existence depends on nature and the natural functioning of the earth's system, of which the myriad interconnected life-forms on the planet are an integral and indispensable part.

Our food, fuel, medicines and much of our fibre and building material all have biological origins. Biodiversity supports such diverse industries as agriculture, cosmetics, pharmaceuticals, pulp and paper, horticulture and construction. Moreover, ecosystems provide human beings with a range of services that would be extremely costly or impossible to replace. These services include purification of air and water, detoxification and decomposition of wastes, generation and renewal of soil fertility, nutrient cycling, pollination of wild plants and crops, control of pests and diseases, stabilization of the Earth's climate, and moderation of floods, droughts and wind temperature extremes.

The lack of environmental awareness revealed by the survey is troubling not only because of the importance of biodiversity, but also because children are the policymakers of tomorrow and the future stewards of the planet. If they remain ignorant of the natural world and society's fundamental dependence on biodiversity, they will have no motivation for protecting

the web of life that ultimately sustains our presence on the planet. To quote the biologist and writer Robert Pyle, “what is the extinction of the condor to a child who has never seen a wren?”

The results of the survey are a call to action. We need to make sure that our children do not take the natural world for granted. They need to have the education and knowledge to deal with the danger that biodiversity loss increasingly poses to their future wellbeing.

This issue is especially pressing since biodiversity is currently being lost at an incredible rate. Conservative estimates suggest that because of human activities the current rate of species extinction is 100 times higher the natural background rate – although it may in fact be up to 1,000 times higher. By the year 2000 only about 73% of the world’s original, pristine biodiversity levels remained. As of 2008, 38 per cent of all species examined are currently under threat of extinction. Even among species not threatened with extinction, the past 20–40 years have seen substantial declines in population or range size in most groups monitored. The overall result is that approximately 60% of examined ecosystem services have been degraded worldwide in the last 50 years. If biodiversity loss continues unabated, it has been projected that by 2050 an additional 1.3 billion hectares of land – an area about 1.5 times the size of the United States – will lose its entire original biodiversity levels. This represents a further decline in worldwide biodiversity of 11%, down to 62% of the original, undisturbed state.

What are the consequences of such a drastic loss of biodiversity? In the short-term, many of the costs of biodiversity loss will be borne by the poor: natural capital constitutes 26 per cent of the total wealth of low-income countries, making subsistence farmers, fishermen, the rural poor and traditional societies the most vulnerable to further degradation. Most of the estimated 30 million small-scale fishers in the developing world are dependent on coral reefs for their food and livelihood. An estimated 300 million people, most of them poor, depend substantially on forest biodiversity, including non-wood forest products, for their subsistence and survival. Overall nearly 60% of the poorest people inhabit fragile vulnerable landscapes, with most depending on these natural resources for their survival. As biological resources continue to disappear, more and more of these people will slide into chronic poverty and hunger.

And yet in the mid- to long-term, even affluent nations will suffer the consequences of biodiversity loss. In 2005 about half of marine stocks worldwide were already fully exploited, while another one-quarter were overexploited, depleted or recovering from depletion. Only about one-quarter were underexploited, or moderately exploited. If these numbers worsen, the global fishing industry – and therefore an important food supply for developed and developing nations alike – will be imperilled. Agricultural food supplies are also becoming increasingly unstable: an estimated $\frac{3}{4}$ of the planet’s crop agricultural diversity has already been destroyed, making widespread failure in our handful of remaining major crops due to disease or pest outbreaks an ever more ominous possibility.

Because of our fundamental dependence on biodiversity, preserving it is central to sustainable development and poverty alleviation strategies. Allow me to quote Dr. Gro Harlem Brundtland in this regard, the visionary Norwegian stateswoman who chaired the commission that, in 1987, produced the seminal report on sustainable development entitled *Our Common Future*: “You cannot tackle hunger, disease, and poverty unless you can also provide people with

a healthy ecosystem in which their economies can grow.”

How are we driving so many species to extinction, and thereby imperilling our quality of life and wellbeing? We are altering natural habitats in many ways, for example by converting forests into agriculture fields or by destructively fishing around coral reefs. We are moving species around the planet through increased trade, transport, travel and tourism, allowing a number of these species to become invasive: introduced to an environment where they lack natural predators and competitors, they rapidly reproduce and wreak havoc on local ecosystems. We are overexploiting our resources by overfishing lakes and oceans and overharvesting forests. We are releasing harmful chemicals from our industrial and agricultural practices into the environment. And we are increasingly putting greenhouse gases into the atmosphere, and thereby changing the global climate.

Climate change is especially worrying, as it is projected to be the single greatest cause of biodiversity loss in the years to come. Approximately 10 per cent of species assessed so far have an increasingly high risk of extinction for every 1°C rise in global mean surface temperature. This trend is expected to hold true up to at least a 5°C increase, which would result in about 50 per cent of species facing increased risks of extinction. Observed changes in the climate have already produced alterations in species distribution and population size, timing of reproduction or migration events, and an increased frequency of pest and disease outbreaks. Climate change has also been implicated in widespread coral bleaching, wetland salinization and salt-water intrusion, the expansion of arid and semi-arid lands at the expense of grasslands and acacia, poleward and upward shifts in habitats, replacement of tropical forests with savannah, and the shifting of desert dunes.

To make matters worse, biodiversity loss itself is contributing to climate change. For example, deforestation is currently estimated to be responsible for 20 per cent of annual human-induced CO₂ emissions, as forests account for as much as 80 per cent of the total above-ground terrestrial carbon. Further, peatlands, which cover only 3 per cent of the world’s terrestrial surface, store 30 per cent of the carbon contained in both terrestrial vegetation and soils. Hence, as forest and peatland loss continues, a much greater proportion of global carbon ends up in the atmosphere and not in terrestrial biomass.

Given the magnitude of the problems we face, education and awareness-raising must be the centerpiece of any long-term strategy to halting biodiversity loss. Hence, more than any other group, children – the future guardians of the world’s biological resources – need to be engaged. And the survey shows quite clearly that children *want* to be engaged. 83 per cent of the children said they enjoyed learning about wildlife and the environment, and more than half indicated they wished they could be taught more about it at school. More than three quarters of them enjoy going for walks in the countryside to spot wildlife, but 12 per cent say they never get the chance to do this.

These results accord well with the celebrated biologist E. O. Wilson's Biophilia hypothesis that humans have an innate desire to catalog, understand, and spend time with other life-forms. This is especially true of children. We can all no doubt agree with the words of the researcher Pushp Deep Pandey: “Children have an inherent desire to run after butterflies, love

beautiful birds and wild places, and want to make friends with elephants and tigers.” Given the opportunity to explore and to learn, children are the world’s most enthusiastic biologists.

Sadly, then, a study of 109 schoolchildren in the UK published in 2002 found that, although the children loved animals, they were forced to settle for synthetic species such as Pokémon because they rarely got a chance to see wild creatures. The study showed that young children have a remarkable capacity for learning about creatures, being able at age 8 to identify nearly 80% of a sample of 150 Pokémon “species”. And yet children learned far more about Pokémon than about their native wildlife, entering secondary school being able to name less than 50% of common wildlife species: at age 8 and over, children typically identified Pokémon species substantially better than organisms such as oak trees or badgers. Confinement to an urban environment no doubt underpins these results. Similar studies in Quebec, Canada, have found that children between the ages of 3-12 spend only 1-6 per cent of their time playing outside, and can more easily identify company logos than name animals, plants and insects that they find outside. According to Pushp Deep Pandey, the average 10-year-old living in a village in India knows the local names of hundreds of birds, plants, insects, scorpion, and other creatures, whereas children raised in Delhi find it hard to name even a few.

It is heartening that the parents of the surveyed children would change this situation if they could. The Airbus survey found that nearly 70 per cent of parents worry that their child does not know enough about nature, wildlife and the environment, and 69 per cent of parents worry that their child spends too much time indoors playing computer games. And with good reason: 73 per cent of parents believe their child spends less time playing outside than they did at the same age, with 52 per cent of children spending less than 2 hours per day playing outdoors. This matches up with the Quebec studies, which found that children spend 30 per cent less time outside than their parents did.

If children want to learn about nature, and their parents want them to learn about nature, there should be few barriers to increased environmental education for youth. Such education should not only take place in the classroom, but also through hands-on learning experiences with biodiversity. That is why initiatives like *The Green Wave* are so important. And that is why the initiative has the full support of the Convention on Biological Diversity, the international treaty with near-universal membership devoted to the preservation and sustainable use of biodiversity.

Now is an opportune time to begin a coordinated, long-term effort to educate our children about the value of biodiversity. The United Nations General Assembly has declared next year, 2010, to be the International Year of Biodiversity. Seven years ago the member nations of the Convention on Biological Diversity resolved to significantly slow biodiversity loss worldwide by 2010. In October next year, representatives of these countries will come together at the tenth meeting of the Conference of the Parties to the Convention, to be held in Nagoya, Japan, to assess how close we have come to achieving the 2010 Biodiversity Target. We will also be creating a forward-looking strategy for ultimately stopping biodiversity loss in the years to come.

The political ball is rolling on biodiversity. The last three meetings of G8 environment ministers have all endorsed the 2010 Biodiversity Target and called for increased engagement at the highest political levels, putting biodiversity loss on the agenda at G8 summits in

Heiligendamm in 2007, Hokkaido/Toyako in 2008, and L'Aquila in 2009. In September next year, just prior to our meeting in Nagoya, heads of state and government attending the sixty-fifth session of the UN General Assembly will discuss the importance of biodiversity for the first time ever. We must take advantage of this political momentum to promote policies and practices that incorporate environmental learning into the day-to-day lives of our children.

It is important also that industry leaders take part in this process. Given the resources available to big businesses – and the resources at stake – they have a clear responsibility to help preserve the biological goods and ecosystem services that contribute so profoundly to their own long-term viability, to the health of the global economy and to the wellbeing of every single human being on the planet. They have a clear responsibility not only to reduce the environmental impact of their activities, but also to engage and educate the public about humanity's fundamental dependence on the natural world. I strongly welcome and would like to make special note of the commitments and efforts being made by Airbus in this respect, and encourage other businesses to follow suit.

What we do in the next few years will determine the quality of life for people of Earth for years to come. If we fail to educate our children and empower them to preserve biodiversity, they and future generations will suffer. A number of ecologists and educators have pointed out that children can bring about a revolution in conservation. It is time to listen to their words and act.

Shakespeare wrote that one touch of nature makes the whole world kin. If humanity is to continue to thrive in the future, children across the globe must be enlisted in the struggle to save the diversity of life on Earth, this one planet that we all call home.

Thank you for your kind attention.
