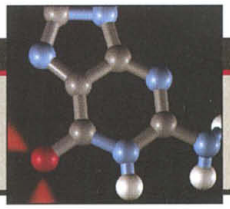
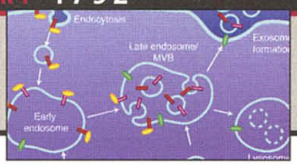
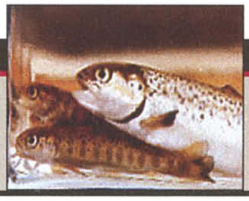


1789
Why A, T, G, C?

LEAD STORY 1792
Ubiquitin's newfound powers





1797
Promises and perils of GM fish

SUSTAINABLE DEVELOPMENT

World Summit Adopts Voluntary Action Plan

Cynics might say that the summit in Johannesburg demonstrated only that rhetoric is a sustainable resource. But several scientists put a more positive spin on the 10-day gathering of global leaders in the South African capital that ended last week.

"There's something to build upon, but it's more like a statement of intentions," says economist Jeffrey Sachs, head of Columbia University's Earth Institute. Like others, Sachs was disappointed by the dearth of concrete plans that emerged, including the lack of support for his own suggestion to triple the budget of the world's global network of agricultural research. "But there's at least a fighting chance of making this a real plan of action," he says.

Nobody expected great things from the meeting, seen as a follow-on to the 1992 Earth Summit in Rio. Officially called the United Nations World Summit on Sustainable Development, the meeting did produce a 65-page Plan of Implementation in which more than 100 governments agreed to work together to protect the environment and reduce poverty. Delegates "made halting progress on some new sustainable issues, which is great," says Brooks Yeager, vice president of the Worldwide Fund for Nature (WWF). But a U.S.-led campaign against specific timetables and goals undermined efforts to go further, says Sachs, who serves as an adviser to U.N. Secretary-General Kofi Annan.

Still kicking? Activists declared the sustainability summit dead, but others—including scientists—say some progress was made.

CREDIT: SAURABH DAS/AP

At the meeting, delegates agreed to restore fisheries to maximum sustainable yields by 2015 and establish a network of marine protected areas by 2012. The action plan also calls for slowing biodiversity loss by 2010 and slashing by half the number of people without access to sanitation by 2015. But proposed language was often softened during the course of the meeting; for example, a suggested 10% boost by 2010 in the use of renewable energy became "substantially increase." In addition, the plan is not binding and, unlike the 1997 Kyoto treaty to curb production of greenhouse gases, does not include plans for individual countries.

Science didn't make it into the political summation of the meeting, but it is discussed in the action plan, which encourages research collaborations between developed and developing countries. And scientists were featured prominently at the meeting. The Paris-based International Council for Science (ICSU), together with other international science and engineering groups, submitted reports and sent delegates, unlike at Rio. The groups also joined with the South African science ministry in a concurrent science forum that "people said was one of the most useful sessions," Sachs says. According to ICSU executive director Thomas Rosswall, "We are extremely pleased with the high profile of science and technology during the summit itself and at many side events."

If the summit lacked substance, it at least served as the backdrop for various initiatives that Yeager predicts "will have lasting impact." The United States committed at least $36 million over 3 years to protect the Congo rainforest, including new protected areas and training of park managers. "I'm very excited by that," says ecologist Stuart Pimm of Duke University in Durham, North Carolina. "It's one of the most important places on the planet for biodiversity." Brazil, the United States, WWF, and other donors also announced a contribution of $81 million toward an ambitious 10-year plan by the Brazilian government to triple the country's strictly protected areas.

Canada and Russia used the summit to declare their intention to ratify the Kyoto climate treaty. Those parliamentary votes would allow it to enter into force without the United States, the world's biggest polluter. Countries also agreed to boost funding for the Global Environment Facility to $2.9 billion (*Science*, 31 May, p. 1596), and a campaign was launched to save crop seed banks (*Science*, 6 September, p. 1625).

The U.N. says that "partnerships" are essential to fulfill the summit's objectives, and Rosswall says that scientific societies now hope to flesh out their own action plans and find ways to fund them. "To go from words to action, that's the challenge," Rosswall says.

–JOCELYN KAISER

IMPACT HAZARD

A Little Respect for the Asteroid Threat

ARLINGTON, VIRGINIA—Asteroids fall to Earth. They always have and always will, unless humankind finds a way to intervene. If one were to strike tomorrow, it could rain death and destruction on a scale that would threaten civilization's very existence.

At a NASA-sponsored workshop* held here last week, researchers heard mixed tidings about the asteroid threat. The good news is that the search for civilization-ending asteroids seems to have passed the halfway point and is on track to reach NASA's goal of detecting 90% of them before the end of the decade. On the other hand, astronomers haven't gotten far finding the tens of thousands of smaller bodies that could still wreak havoc across a megalopolis. And if an asteroid of whatever size were detected on a collision course with the home planet, no one would know what to do about it.

"In some sense, we have the future of the world in our hands," said astronomer David Morrison of NASA Ames Research Center in Mountain View, California. In principle, the asteroid hazard, unlike any other natural hazard, can be totally predictable, he notes. But scientists and the public have yet to decide how hard astronomers should look for smaller killer asteroids and how much planetary scientists need to learn about the enemy before confronting it.

By the end of the decade, astronomers

* Workshop on Scientific Requirements for Mitigation of Hazardous Comets and Asteroids, 3–6 September. See www.noao.edu/meetings/mitigation/index2.html