A new Web site, Human Genome Central, is described that provides links to various public resources that have "ancillary information and tools that provide an ongoing picture of the [human] genome that is comprehensive and comprehensible." How greenhouse gas emission baselines could be calculated "so as not to penalize developing countries that enact and enforce strong environmental laws" is examined. And archaeological evidence used to determine when moas became extinct in New Zealand is discussed.

Help in Accessing Human Genome Information

The vast majority of the human genome sequence is now publicly available. About 25% of the genome sequence is in finished form, and most of what remains is in draft form. A publication on the working draft will be submitted later this year. As with other organisms, the full primary source data are available in each of three public databases: GenBank, European Molecular Biology Laboratory (EMBL), and DNA Data Bank of Japan (DDBJ). However, it is a daunting and time-consuming task for users to directly analyze the primary source data. Many users would like access to ancillary information and tools that provide an ongoing picture of the genome that is comprehensive and comprehensible. Such information includes the overlaps between clones, the correct genomic location of each clone, an integrated genomic sequence that merges the individual clones, and annotation of gene content. In fact, such resources have been developed and are freely available, but they are not widely known.

For ease of access, we have created a master Web site called Human Genome Central that contains a brief listing of links to some of the most useful public resources; further links to additional sites can be found within them. The Web sites will be regularly updated with new information. Human Genome Central can be found on the National Center for Biotechnology Information (NCBI) and European Bioinformatics Institute (EBI) sites at http://www.ncbi.nlm.nih.gov/genome/central and http://www.ensembl.org/genome/central/, respectively.

The International Human Genome Sequencing Consortium

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How could we calculate emission baselines to protect rain forests such as this one in Bolivia's Noel Kempff National Park?

Rain Forest Conservation Under Review

In the June 9th issue of *Science*, the authors of the report "Economic incentives for rain forest conservation across scales" (C. Kremen *et al.*, p. 1828) and the authors of the Perspective "Counting the cost of deforestation" (R. Bonnie *et al.*, *Science*'s Compass, p. 1763) raise a troubling aspect of the economics of carbon sequestration and its link to foreign investment incentives. Kremen *et al.* note that the Malagasy government has trouble capturing rents from logging concessions. Therefore, the authors discount the rate (or rent) required to compensate for carbon conservation. Yet, the Malagasy government's inability to enforce its laws makes it a candidate to receive more than its (discounted) "base" rent calculated under the Kyoto Protocol. A country that enforces tough environmental laws would receive just its (undiscounted) base rent. This rent enhancement is because, for countries such as Madagascar, without higher rent or an appropriately calculated base rent, it would be even more difficult for them to put in place the enforcement mechanisms to prevent the same deforestation the authors seek to avoid.

All agree that economic incentives should not discourage governments from environmental enforcement. But such a methodology has not yet been clearly enunciated under the Kyoto Protocol, nor by the authors. An analogy to the Madagascar case can be seen in Nigeria, whose law does not require the capture of flared natural gas. Is it realistic to expect Nigeria, like Madagascar, to accept less "Kyoto" rent from foreign investors to reduce gas emissions, simply because Nigeria's legislation does not meet international best practice? Although foreign investors should be encouraged to help Nigeria find ways to reduce emissions, what rules would ensure that the lure of such investment does not harm the incentive to enforce environmental law now? The same is true for countries that effectively ban unsound logging. Bonnie *et al.* note that "[emission baselines] must be established that account for the rate of deforestation that would have occurred in the absence of the conservation project." Is the "deforestation" they refer to that which would have occurred with or without enforcement of forest legislation? If greenhouse gas emission baselines are set appropriately, they can provide developing countries the helping hand to enforce environmental law. But how do we set the baseline to be sure not to discount rates for those countries now using scarce resources trying to enforce their environmental laws, and at what rates?

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Responses

Di Leva raises a challenging issue that negotiators of the Kyoto Protocol are discussing: How can greenhouse gas emission baselines be calculated to avoid creating anti-environmental incentives, such as countries not enforcing environmental laws or threatening to clear their forests? This maneuver can be avoided by requiring that baselines are calculated on emissions in years before the Protocol was finalized (before 1997). With this stipulation, a country cannot suddenly claim a higher baseline to leverage bogus emission reductions.

Negotiators could also implement rules to place countries with strong past environmental performances on equal footing with poorly regulated countries by requiring that baseline emission scenarios be set to standard or best management practices. With this formula, only additional emission reductions above these criteria would be eligible for carbon credit financing. However, requiring countries to meet such standards (which may not reflect on-the-ground reality) will lessen the prospect of engaging recalcitrant countries in emission reductions. In the case of Madagascar, we calculated