The Values of Biodiversity

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Abstract

Human society has relied upon the diversity of genetic resources for millenia, as a source of solutions to problems that arise in the biological arena. When a crop has failed, the surviving strains have signaled the presence of a solution concept, and this has guided plant breeders toward varieties that are successful in the existing environment). When a pest, pathogen or plague has passed through the human population, the primary source of remedies has been the set of chemicals found within the natural world, identified first by those living in nearest proximity to them. These solution concepts have been identified and diffused, and have formed the foundation of the life sciences as we know them. These have been the values of genetic resources for the purposes of research and development in the past, and the question we are concerned with here is: What are the values of conserving genetic resources for R&D for the future?

Will the diversity of genetic resources remain a fundamental cornerstone for economic development? Can we continue to solve biological problems in the future through accessing diversity, as we have done in the past? Will we be able to do so with an ever-dwindling supply of diversity? Who should bear the risks of a future filled with biological problems but relatively devoid of diversity, the current generation making the choices regarding diversity or the future generation solving the problems that arise? The basic problems all concern how to take action now regarding diversity in the present in full knowledge of the vast future uncertainties regarding what will have value and what will not. In this survey we attempt to answer some of these questions in the context of a survey of the four different economic approaches that have been taken to these issues.

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