

AGROFORESTRY:

DOES IT NOURISH THE LAND AS EXPERTS CLAIM IT DOES?

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ABSTRACT

As the degradation of the environment of the developing world continues, and the numbers of poor and hungry people increase, international development and research agencies are focusing on agroforestry as a way of managing limited natural resources. Agroforestry is the name given to land-use systems in which trees are purposefully grown in combination with crops and/or animals. Such systems have been used by indigenous peoples throughout history to overcome environmental constraints and manage the land. Agroforesters claim that the biogeochemical influences of trees on annual crops and the soil make agroforestry systems more productive and sustainable than other means of food and fuel production.

I investigated the claims made about the biogeochemical contributions of trees in agroforestry systems by reviewing the research literature on the ability of trees to fix nitrogen, combat soil erosion and pump nutrients from deep soil layers. I found that substantial evidence exists in support of parts of the claims, while other parts are based on indirect evidence and assumptions. The research gaps I have identified prevent the benefits of agroforestry from being fully realized and should be addressed promptly. To show one of the directions which future agroforestry research should take, I propose an experiment to investigate root distribution and competition in a typical agroforestry system. I conclude with a discussion of the social policy implications of my research. I feel that agroforestry is a valuable method of land-management, and that development assistance agencies should encourage more agroforestry research and development projects. In addition, policy makers should make every effort to make the results of agroforestry research available to farmers, and to involve farmers directly in the research process.