

DIETARY DIVERSITY, GLOBAL CHANGE AND HUMAN HEALTH

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Ingested plant and animal products offer functional benefits to health in addition to essential nutrition. This recognition parallels a growing appreciation that emerging diseases of global importance with a dietary basis can be better addressed through a diversity of species and genotypes, rather than by focussing on single chemical entities within a minimized source base. While traditional systems typically provide diets varied in composition, contemporary global socio-economic, cultural and environmental changes that limit dietary options set the stage for new epidemics. Micronutrient deficiencies which remain serious global concerns are for burgeoning urban populations potentially compounded by diseases of energy over-consumption such as diabetes, cardiovascular disease and cancer. Moreover, reduced or non-existent intake of fruits, vegetables and other traditional plant products represents a paucity of the phytochemical factors that might help counter the adverse effects of contamination, the highly oxidizing conditions associated with substandard cooking practices or other environmental deficiencies characterizing many circumstances of urban poverty.

The success of agriculture focussed on a few staple crops in addressing fundamental problems of food security ironically contributes to new health problems, both as the source of inexpensive carbohydrates and fats and by disrupting physiological balance normally maintained through diversity.

Indigenous resources are often superior to alternate foods although their biological benefits may remain unrecognized by scientists. Nutrient, digestive, antioxidant, hypoglycemic, immunomodulating, pharmacological and other properties that meet local and regional needs can offer a rationale for the conservation of these resources. As well regional commercialization of traditional species and elaboration of dietary supplements and other products that can be harvested sustainably can offer economic opportunities for local communities.

Indigenous knowledge in addition to offering insight into the properties of plants and animal products can be a focal point for the maintenance of cultural integrity, and procurement and preparation of indigenous foods can help to enforce and restore social structures. Thus socio-cultural considerations are essential both for identifying diversity and as an avenue by which diversity is conserved under changing economic conditions.

Within the disease context that accompanies disruption of traditional human ecology, biological and cultural diversity in concert with scientific investigation offer a means for optimizing the necessary adaptations to the dietary and environmental change confronting humans in developing and developed countries alike.