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“Solidarity in a competing world —  
fair use of resources”

## Optimum Food Consumption Can Save Natural Resources

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### Abstract

Adequate nutrition refers to the consumption of diverse food groups that meet the nutrients requirement for growth, body maintenance, physical activities and health of people. Optimal nutrition satisfies daily nutrient-requirement and controls excess and unhealthy food consumption. The lack of optimal nutrition leads to either nutrients deficiency or overweight and obesity with subsequent health and environmental problems.

The quantification of the effects of undernutrition and nutrients deficiency in terms of change to natural resources is unknown. However, body growth, strength, energy utilisation, cognitive ability, motivation, immune system and health are negatively influenced, affecting seriously the productive performance of people. It is recorded that child undernutrition in Africa is associated with losses in health, education and productivity and cost Egypt, Ethiopian and Uganda 1.9, 16.5 and 5.6% of their GDP, equivalent to 3.7, 4.7 and 0.9 billion USD/year respectively.

The total food energy cost for global overweight and obesity in 2015 is estimated at 659.445 Billion Mcal. Based on this, the global food expended for the development of global overweight and obese weight is 261.684 million tons. The global food energy cost for the maintenance of excess weight is estimated at 239.8 Billion Mcal/year. This accounts to 95.07 million tons of food per year. Land area equivalent to 100.26 million hectares is used to produce enough food to meet the cost of global excess body weight whereas additional 36.43 million hectares/year is required to meet the requirement for maintenance.

In general, optimal nutrition can save 137 000 000 ha land from the change of land use by cultivation. This can limit the loss of biodiversity, soil erosion, soil biology- and nutrient depletion, as well as greenhouse gas emission. Water volume of about 355 km<sup>3</sup> that might be needed to cultivate the excess land area can be saved. An estimated amount of nitrogen fertiliser equivalent to approximately 20 Mt season<sup>-1</sup> usable to fertilise the excess area of land remains undistributed. This controls the use of fossil oil for N-fertiliser production, subsequent gas emission, and the loss of nitrogen compounds to the atmosphere and hydrosphere.

**Keywords:** Natural resources , nutrient deficiency, obesity, optimum food consumption, overweight