

Optimum food consumption can save natural resources

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Introduction

The lack of optimum nutrition leads to either nutrient deficiency, overweight or even obesity with subsequent health and environmental problems. Overweight and obesity can result from excessive food consumption preconditioned by unwarranted expansion and intensification of agriculture with unforeseen destruction of ecosystem services. Preventing and rectifying micronutrient deficiency could hinder the unnecessary economic and natural resource losses contingent to human growth retardation and health problems. It is, therefore, intended to show by implication to what extent optimum nutrition could save natural resources.

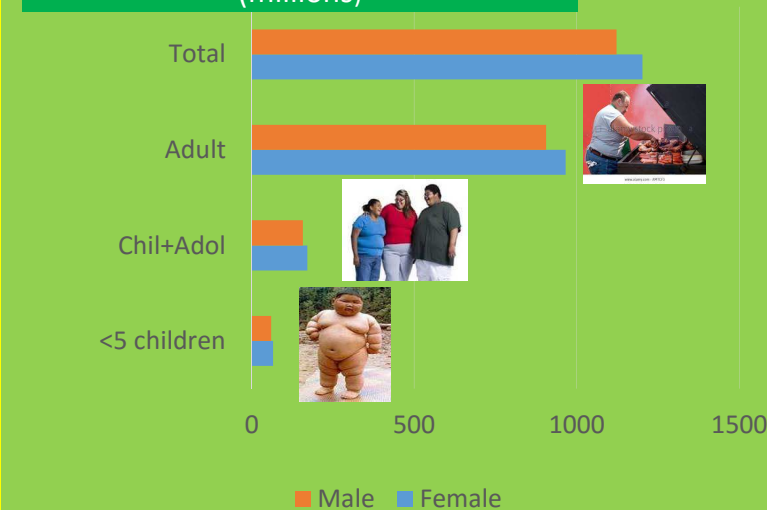
Methods

The conservation of natural resources by reducing overweight and obesity could be calculated on the basis of the concept of food energy (GE) partition, the efficiency of conversion of GE to net energy for fat deposition, GE conversion rate to cereal equivalent and yield of cereal equivalent per hectare.

Data on the productivity and economic effects of nutrient deficiency is coined from recent literature (Hussain et al. 2015).

Results

Global overweight and obese population (millions)



Estimated based on: Marie Ng et al (2014)

Global extra food consumption for excess weight (overweight and obesity) (million tons)

Food for excess weight Mt*	261.684	**
Food for TEE*** due to excess wt. Mt/year	95.070	**

*Mt = million ton; **Habte TY, Krawinkel M (2015) ***TEE (total energy expenditure) = Basal metabolic rate x Physical activity levels

Conclusion

Optimum food consumption, which is characterized by the regulation of excessive food consumption and the promotion of satisfactory macro- and micronutrient intake from diverse foodstuffs contributes to the proper utilization and conservation of natural resources. It limits the expansion and intensification of agriculture land and regulates ecosystem services. At the same time, it advances the productivity of human resources and national economy by the promotion of ideal growth and good health.

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The level of natural and commercial resources that remain conserved because of optimum nutrition

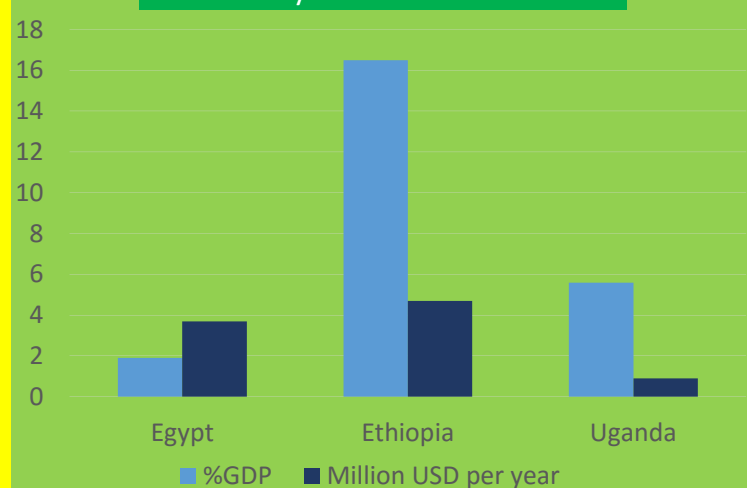
Agricultural land area (million ha)	137	Habte.. (2015)
Water resource (cubic km)	355	Mekonnen.. (2010)
Nitrogen fertilizer (million ton)	11	FAO (2003)
Agro-biodiversity (species)	152	GRIDA (2012)



Costs of nutritional deficiency that can be saved by optimum nutrition

Body growth, strength, energy ilization, cognitive ability, motivation, immune system and health are negatively influenced by the deficiency of nutrients, which in turn affect seriously the productivity of human resource. The world bank estimates that undernutrition causes losses in GDP of 2 to 3% globally.

The economic cost of micronutrient deficiency in selected countries



Source: Hussain, Talukder, Ahmed (2015)