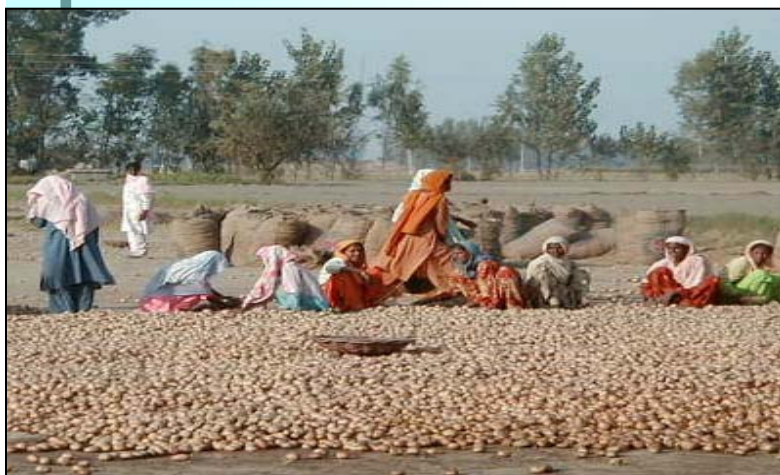


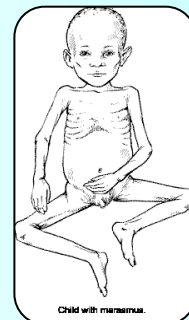
## Introduction

Biofortification of food is a relatively new development that complements the existing instruments to ameliorate malnutrition problem. It refers to the breeding of staple food crops for higher nutrient content levels. Protein-Energy Malnutrition (PEM) is a major type of macronutrient malnutrition in the developing countries, which is characterized not only by energy deficit due to reduction in all macronutrients, but also by a deficit in many micronutrients. This study addresses the potential ability of the biofortified Potato and its socio-economic dimensions with regards to PEM.



## Protein Energy Malnutrition (PEM)

PEM is mainly seen among children, 80 % of the Asian children are under this threat and India is the home of the largest severely malnourished children in the world. Two major forms of PEM seen are Kwashiorkor and Marasmus.



## Relevance of 'Protato'

Protein rich potato or 'Protato' is developed by the public research sector of India, enhanced with a gene (*Ama1*) from the amaranth plant. It contain up to a third more protein than traditional potatoes and significantly higher levels of the essential amino acids viz. lysine and methionine. From the perspective of welfare economics, this study proposed to address the nutritional impacts of a transgenic biofortified crop. As the majority of Indian diet comes from vegetarian dishes, protato expected to play a role in reducing PEM.

## Potential Impacts of Protato

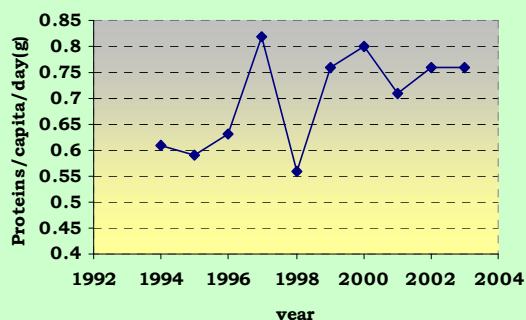
Protein per capita per day availability from potato in India remain stagnant for the last 10 years (Figure 1), so it is expected that protato which is having a third more protein than traditional potatoes, can help to increase Protein intake and in turn to reduce the PEM. However, protato cannot be considered as a panacea for protein malnutrition problem, though it is expected that it will contribute significantly in reducing the PEM.

## Challenges ahead..

Consumers' may be skeptical about the health risks associated with the genetically modified food and this may shift the demand curve downwards, especially since the concerns raised by the Non-Governmental Organisations is gaining popularity. The health and environmental effects of transgenic food crops also should be carefully analysed



Figure 1: Percapita Protein Availability from Potato Consumption in India



Source: FAOSTAT, 2006

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## Contact information