The spike in world food prices in 2007-08 pushed the number of chronically hungry people in the world above 1 billion. The number suffering from chronic hunger declined in 2009-10 but the world food price index reached record levels in the first half of 2011 and the figure is edging back towards 1 billion chronically hungry. The number of people suffering from ‘hidden hunger’ which is caused by a lack of micronutrients required for normal health and wellbeing is in excess of 2 billion. Unprecedented global hunger is occurring at a time of climate uncertainty and increasing occurrence of climatic extremes including both droughts and floods. Predictions of a 2°C rise in global temperature and an atmospheric CO2 concentration above 400 ppm from 2050 will add to the pressure on the world community to produce 50-70% more food for a global population of around 9.2 billion by 2050.

Around 60% of the global hungry are women and girls even though women contribute around 43% of the agricultural labour force of developing countries. An inadequate diet and micronutrient deficiency in women has an enormous impact on the health outcome of their children. The impact of women on child health starts during early pregnancy when foetal development can be subjected to epigenetic programming of the DNA. The nutrient and hormonal environment of the developing foetus influences tissue and organ growth and subsequent function later in life, and is a contributing factor to lifetime health outcomes. Maternal deficiency in micronutrients including iron, iodine, zinc, folate and vitamin B-12 has been linked to abnormalities in foetal growth and development. As might be predicted, multi-micronutrient supplementation in women lacking normal dietary intake can improve foetal and birth prospects. After birth, an appropriate diet is essential for normal development during infancy and early childhood. Women, again, have a very important role and it has been shown that when women in developing countries have greater input into the family budget there are improved outcomes for child health.

Women and children in developing countries in the Asia-Pacific region including Oceania can suffer food and nutritional insecurity similar to developing countries in other parts of the world. Particularly high incidences of micronutrient deficiency can occur in South Asia. Climate change is impacting on food security in the Asia-Pacific region through alteration in the growth of plants that are a source of staple food, and there are also impacts of sea level rises on areas traditionally used for food production. A further dimension of food and nutritional insecurity in women of childbearing age in developing countries are the interrelationships with HIV and malaria.

Hence, it can be strongly argued that the global focus on food security in developing countries should be directed to women of childbearing age and young children. The emphasis on women should commence during adolescence given that marriage and childbearing can occur at a relatively young age in developing countries.

Metabolic disturbances of pregnancy, and negative impacts on the foetus and child, can also occur as a result of maternal obesity or simply poor dietary choices during pregnancy. This is occurring with increasing frequency in developed countries and broadly across socio-economic groups. A compromised metabolic environment during pregnancy can be further exacerbated by poor nutritional management in young children. A common outcome of maternal obesity or poor diet during pregnancy is higher adiposity and increased susceptibility to Type 2 diabetes in the child. Relationships between the maternal diet during pregnancy, specific epigenetic programming, and obesity to 10 years of age in children, were recently reported.

In summary, food and nutritional security is being challenged globally by population growth, climate change, economic crises, and increases in the price of food. These impacts are particularly noticeable in developing countries but social groupings in developed countries are not immune. The present article makes the argument that particular attention should be given to food and nutritional security in women of childbearing age, both in developing and developed countries. A balanced metabolic environment (hormones, nutrients) during foetal development is required for optimal child survival and lifetime health and wellbeing. Nutritional management during infancy and early childhood are also important for lifetime health outcomes and personal achievement.