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The Food-Environment-Health Nexus of nutrition security in India

Maria Cristina Rulli¹, Livia Ricciardi¹, Davide Danilo Chiarelli¹, and Paolo D'Odorico²

¹Politecnico di Milano, Milano, Italy (cristina.rulli@polimi.it)

²University of California at Berkeley

Feeding humanity while preserving environmental sustainability is one of the major challenges of the next few decades. Many of the global changes for planetary sustainability are due to the food system that is increasing production at the expense of the environment. However, nutrition related diseases caused by low quality diets are on the rise. The 2018 FAO report on State of Food Security and Nutrition in the World shows that the number of malnourished people keeps increasing. Undernourished people account for 821 million, including 151 million children under five affected by stunting, while the lives of over 50 million children in the world continue to be threatened by wasting. On the other hand, over 38 million children under five years of age are overweight, 672 million adults are obese, while diabetes, high blood pressure and anaemia are increasing.

Iron Deficiency Anaemia (IDA) is a major problem in India, especially among women. Around 53.1% of Indian women are affected by IDA, which is indeed becoming a major public health issue.

Although India was the first country to launch the National Nutritional Anemia Prevention Program in 1970, IDA remains widespread. There are many reasons for the emergence of a wide range of IDA in India, namely, insufficient iron intake, poor iron absorption, increased iron demand during repeated pregnancy and lactation, insufficient iron reserve at birth, umbilical cord clamping time, and food supplementation.

Punjab is the Indian state facing the most severe condition regarding the prevalence of anaemia, despite this state being one of the main food producers of India. Taking Punjab as a case study we analysed to what extent it is possible to feed the Punjab population with an healthy (adequate in term of micronutrient) and sustainable diet. To this end, using data from National Family Health Survey-4 (NFHS-4) and projected population surveys, an estimation of iron requirement is calculated. Natural resources (i.e. land, water) used for current diet and the additional resources needed to sustainably feed the local population with a reference healthy planetary diet are evaluated.