

## Can we meet the first Millenium Development Goal in konzo and lathyrism settings by 2015?

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Tens of thousands of people are affected by konzo and lathyrism, two toxico-nutritional neuro-degenerative diseases which persist exclusively among the poorest and most marginalized communities.

Konzo and (neuro-) lathyrism are clinically similar with spastic paraparesis of the legs as a common picture. As of now, there is no geographical overlap in the cultivation and consumption of cassava (*Manihot esculenta*, the causative agent of konzo) and grass pea (*Lathyrus sativus*, the causative agent of lathyrism) and in the occurrence of those two diseases, caused by their prolonged overconsumption. Konzo is only reported in sub-Saharan Africa whereas lathyrism is documented in Ethiopia and the Indian Subcontinent. Lathyrism is now eradicated from Europe where several countries (Spain, Greece, Poland, Ukraine) were affected in the past century (Tshala et al, 2007; Lambein et al, 2010).

Epidemics of konzo and lathyrism usually appear when environmental conditions result in heavy dietary reliance on cassava or on grass pea, respectively. These two crops are high-yielding with relative resistance to abiotic stress such as drought or low fertility of the soil, or to entomological and phytopathological attacks. However, adverse environmental conditions such as drought, demographic pressure, climate change or war forced the poorest populations to live on subsistence farming and to rely almost exclusively on products derived from those two resistant crops and the consequences of this are outbreaks of those two diseases (Lambein et al., 2010). Both konzo and lathyrism occur almost exclusively among subsistence farmers who consume virtually only the produce of their often marginal land.

These diseases do not travel easily. They are mostly concentrated in settings of extreme poverty and in remote rural areas with a high proportion of people whose income is less than 1 US \$ a day at purchasing power parities (PPP) values. The 1 US \$ a day at PPP prices is an international poverty line extensively used and computed by the World Bank. This poverty line is supposed to define the inability to pay for food needs (Chen and Ravallion, 2001). The low commercial value of the products of these subsistence famers has contributed to this phenomenon.

The affected households are poor and often illiterate and have little or no political voice. The proportion of illiterate people is high and these diseases thrive in places with unsafe water, poor sanitation, and limited access to basic health care. These factors also contribute to the underreporting of konzo and lathyrism.

On September 2000, the world's leaders agreed on the Millennium Development Goals (MDGs), committing their countries to exert stronger efforts to reduce poverty, improve

education and health levels, achieve gender equality, and environmental sustainability. The first general MDG is to “eradicate extreme poverty and hunger”. In particular, target 1 states the goal of halving poverty between 1990 and 2015, the proportion of people whose income is less than 1 US \$ a day at purchasing power parities (PPP) values (Cicowiez, 2005).

Improving conditions to prevent konzo and lathyrism is possible but many countries remain far from reaching the first (UN) millennium development goal (MDG) by 2015, and much of the progress is being eroded by the recent global food price and economic crises (Fanzo and Pronyk, 2010). Increasing the commercial value of products from those subsistence farmers could help them to better access to more varied and thus healthier diets, and would certainly contribute to achieve the first UN Millennium Development Goal.

## **References**

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