

Synthetic biology may place huge burden on small farmers, environment

The global value of the synthetic biology market reached 1.6 billion dollars in 2011 and it will further grow to 10.8 billion by 2016, increasing at a compound annual growth rate (CAGR) of 45.8 percent.

Haiti's share of worldwide vetiver exports grew from 40 percent in 2001 to over 60 percent in 2007. But in the wake of the worldwide financial crisis, Haiti has seen a sharp reduction in vetiver exports. The country, which shares the island of Hispaniola with the Dominican Republic, produces about 50 to 60 tonnes of vetiver annually, about 50 percent of the world's supply.

An estimated 60,000 people in Haiti's Les Cayes region depend on vetiver as their primary income source. The crop is grown on 10,000 hectares.

However, struggling Haitians who farm this product could be dealt another harsh blow with the introduction of a new industry – synthetic biology. Although still undefined, synthetic biology can be described as 'extreme genetic engineering,' and refers broadly to the use of computer-assisted, biological engineering to design and construct new synthetic biological parts, devices and systems, and to redesign existing biological organisms.

Synthetic biology differs from conventional genetic engineering in its technique, scale, and its use of novel and synthetic genetic sequences – raising new risks to biodiversity.

Friends of the Earth International is urging caution and has made several recommendations to the 12th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 12).

"We are recommending a moratorium on the environmental release and the commercial use of synthetic biology, specifically because of the lack of international regulations and virtual lack of environmental and safety assessments anywhere in the world. We are encouraging the CBD to stand behind the precautionary approach which countries have already agreed to by being signatories to the CBD," Perls said.

"This is a new and emerging issue and needs to be treated as such. Many of the concerns have to do with the environmental, cultural, social impacts of this new technology, including what would happen if a product like ginseng here in Korea were to be produced using synthetic biology. The impact that it would have on small farmers across this country could be immense.

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