African Journal of Environmental Science and Technology Vol. 2 (7), July, 2008
Available online at http://www.academicjournals.org/AJEST
ISSN 1996-0786 © 2008 Academic Journals

Editorial

Greening Evolution

The second week in July marks the occasion of an extraordinary conference entitled "*Future Trends in Genetics and Biotechnology for Safe Environment*," sponsored by the Egyptian Society for Environmental Sciences (ESES) with support from various local and international agencies. The conference venue at Ismaila, Egypt – half way through the famous Suez Canal on the university campus – is particularly instructive for attempts by humans to control the environment on a large scale (Figure 1). The technological, social, and ecological history of the Suez Canal is rich in sophisticated intrigue, but it is also accompanied by some environmental impacts, including the so called *Erythrean Invasion* representing the dominance of species from the salty waters of the Red Sea over the freshwater species of the Mediterranean. Even here, we have important lessons from the strategy of biological evolution through natural selection, and the co-evolution of life and environment.

We are now deep within the age of biotechnology and genetics, and the rapidly emerging techniques have opened doors of exploration and creativity with tremendous implications for human welfare, industrial ecology and environmental safety[1, 2]. It is arguable that the rewards of genetic engineering and biotechnology are most needed in developing countries and those with economies in transition. However, most of the research activities remain grounded in affluent countries, and the prospects of technology transfer remain subject to powerful political and economic challenges. The task for academicians and public officials is first and foremost to encourage the roots of scientific research at the local level and to further investments in trans-boundary institutions that support the exchange of ideas, and resources and technologies across nations[3, 4]. Within this framework, a successful scientific conference strives to bring active researchers together for the purposes of charting the status of knowledge and future trends. The conference at Ismaila is important and timely, in part because there is a large variability in scientific capacity and attitudes toward biotechnology and genetic engineering on the host continent. For example, the information presented in Figure 2 shows that only South Africa allows the cultivation of genetically-engineered crops. Seven countries have rejected food items produced through genetic engineering, and four countries have banned genetically modified organisms (GMO). This variation is also reflected in international ratification of Biosafety protocols. It is not entirely clear what political or cultural forces are behind the adoption of genetic engineering and biotechnology in Africa, but as the scientific research proceeds, we must encourage interdisciplinary dialogue to ensure that checks and balances are integrated in the educational and societal institutions upon which sustainability depends.

Congratulations to the organizers of the 3rd International Conference of the Egyptian Society for Environmental Sciences for the inspired focus on genetic engineering and biotechnology. Much work remains to be done, but this is a great start.

---

[1] **Ogunseitan**, O.A. 2002. Episodic bioavailability of environmental mercury: Implications for the biotechnological control of mercury pollution. *African Journal of Biotechnology* 1:1-9.

[2] **Ogunseitan**, O.A. 2003. Biotechnology and industrial ecology: new challenges for a changing global environment. *African Journal of Biotechnology* 2: 596-601.

[3] **Ogunseitan**, O.A. 2003. Framing environmental change in Africa: Cross-scale institutional constraints on progressing from rhetoric to action against vulnerability. *Global Environmental Change* 13:101-111.

[4] **Ogunseitan**, O.A. 2006. Designing better environmental assessments for developing countries: Lessons from the U.S. Country Studies Program. Chapter 10 In: Farrell, A., and J. Jaeger. (Editors) Assessments of Regional and Global Environmental Risks: Designing Processes for the Effective Use of Science in Decision making. Resources for the Future, Washington, DC.

Figure 1. The Suez Canal is visible from Space according to this image by a NASA satellite on January 30, 2001

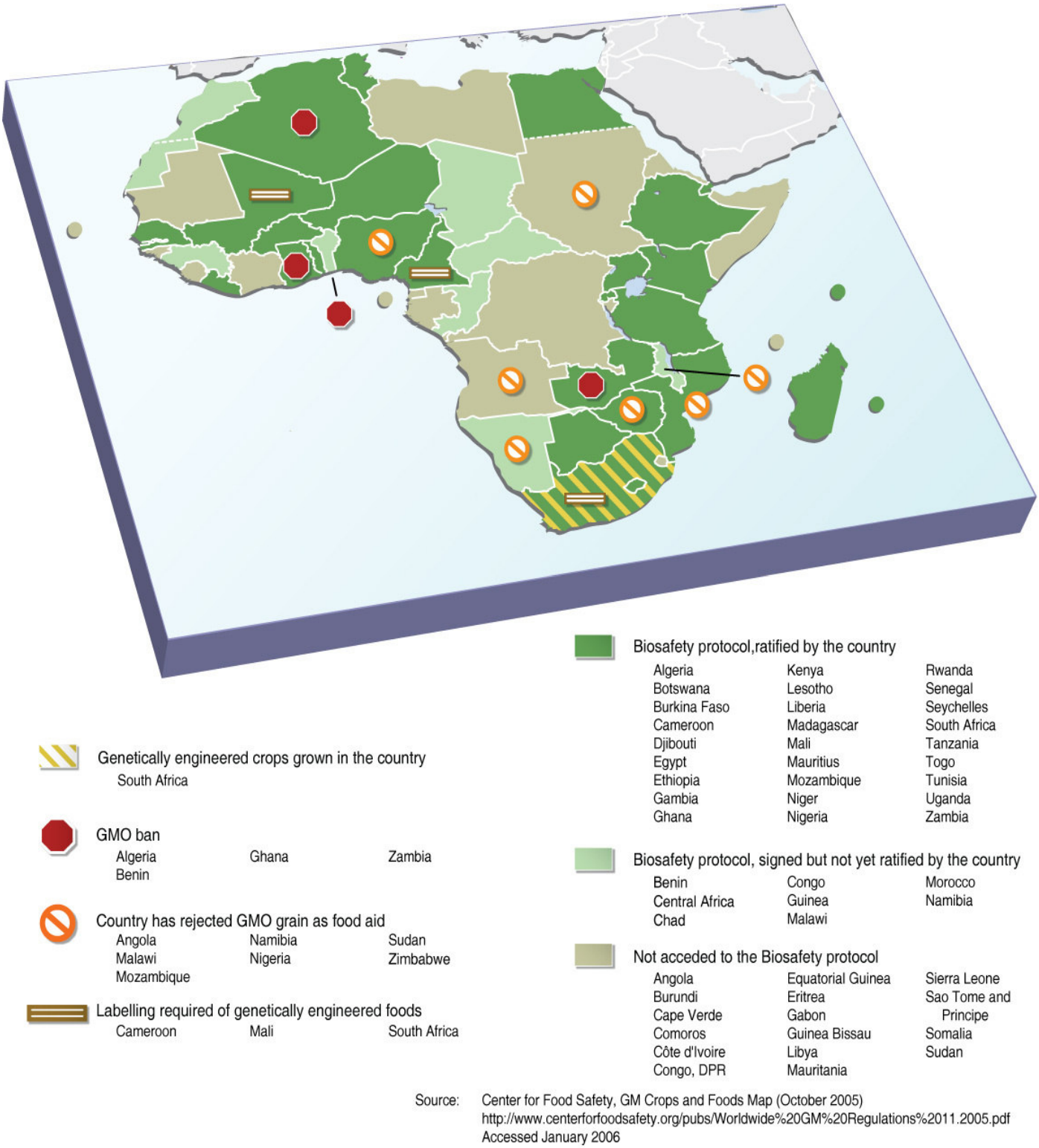

Figure 2. Variation in the attitude toward genetic engineering and biotechnology in Africa.

Oladele A. Ogunseitan, Ph.D., M.P.H.
Program in Public Health & School of Social Ecology
University of California, Irvine
CA 92697, USA

Editor-in-Chief