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## Book Reviews

**Seeds of the Earth: a private or public resource?** P. R. Mooney, Ottawa: Inter Pares (for the Saskatchewan Council for International Co-operation and the International Coalition for Development Action), 1979, pp. vii, 120. \$A10.00 (distributed by the Australian Council of Churches).

Canada, like Australia, has recently been considering the adoption of Plant Variety Rights (PVR). (A grant of PVR for a plant variety confers a property right in that variety analogous to a patent grant for an invention). Unlike Australia—and, apparently, unlike any other country adopting PVR—Canada has seen considerable opposition to PVR adoption. *Seeds of the Earth* develops a case against PVR deriving from Canadian opposition, and drawing on international experience.

Mooney argues that a global economy in seeds arises from the dependence of the agriculture of industrialized countries on the Third World for genetic diversity in commercial plant species. The existence of the global seed economy has been extended by the Green Revolution which has partially tied Third World agriculture to the input industries (particularly fertilizers and crop chemicals) and technology of industrialized countries. It is argued that the Green Revolution has not only extended the global seed economy, but also indirectly threatens its longer-term viability since the Green Revolution and accompanying agricultural development have reduced the diversity of naturally-occurring genetic material in the Third World, thus reducing the supply of parent material for future plant breeding.

The emergence of a global seed economy, particularly where based on hybrid varieties, is argued to stimulate the emergence of large, transnational seed traders. The activities of seed corporations are enhanced, it is claimed, by the enactment of PVR which extends corporations' breeding activities into all plant species. Horizontal and vertical integration of plant breeders with other industries servicing agriculture, particularly those involved with agricultural chemicals, is argued to be undesirable.

Finally, it is argued that there is a close but concealed relationship between the adoption of PVR legislation and other legislation controlling plant varieties and their seeds. The EEC's Common Catalogue, which apparently aims to rationalize plant varieties throughout the EEC, is singled out for special criticism.

Viewed from the Olympian heights of the *optimum optimorum* of neo-classical economics, Mooney's book appears uninteresting. No estimated supply and demand curves, nothing on pricing efficiency, no consumer or producer surpluses, not even a social welfare function. However, as documented in *Seeds of the Earth*, and as suggested by scanty Australian evidence, the essence of plant breeding with effective plant property rights is oligopoly. Unless it can be shown that the degree of oligopoly with PVR is minimal—which does not appear likely on the evidence—neoclassical economics with its Pareto welfare economics underpinnings and its emphasis on perfect competition is quite the wrong tool for examining PVR adoption.

The necessary tools for analyzing the effects of PVR adoption are those of the institutional and political economists, or those of traditional economists who have strayed into a study of oligopoly. What is required is an appreciation of the relationship between PVR and corporate size and their effects on resource allocation in plant breeding; the interaction of government and interest groups such as plant breeders and farmers; the effectiveness of PVR as a barrier to industry entry; the role of R & D and advertising on market structure, competition and resource allocation in plant breeding; and the impact of horizontal and vertical integration and corporate merger which appear to be stimulated by PVR.

It is precisely these issues which Mooney emphasises in his study of the global seed economy. The study is constrained by the inevitable problem of oligopoly analysis—the lack of data. Further, Mooney appears to take a too-pessimistic view of the economic effects of large corporations and possibly a too-optimistic view of the ability of public plant breeders to solve the world's plant breeding problems. Despite these short-comings, *Seeds of the Earth* is, to date, the best integrated analysis of the effects of the adoption of Plant Variety Rights.

DAVID GODDEN

*New South Wales Department of Agriculture, Sydney*

