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GROWTH AND EQUITY IN AGRICULTURAL DEVELOPMENT

PROCEEDINGS

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ELMHIRST MEMORIAL LECTURE

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Agricultural Economists and World Conservation Strategy

It is a daunting honour to follow in the footsteps of the illustrious men who have delivered the Elmhirst Lectures at previous conferences. At the same time, I am pleased to have been invited to undertake this task because it was my privilege to have been associated with Leonard Elmhirst (albeit in a minor capacity) in the running of this Association over a span of two decades. Though we were geographically separated by half the globe and consequently met infrequently, I came to admire his dedication to ‘the improvement of economic and social conditions relating to agriculture and rural life’, to use the phraseology of the Association’s first constitution.

In my antipodean eyes, Leonard Elmhirst was the epitome of an ‘English gentleman’ – always courteous in his dealing with other people but firm in his belief in the importance of exercising leadership when he deemed the situation demanded it. He also seemed to have the true Englishman’s belief that the rules of the game of cricket provide an indispensable guide to one’s proper conduct in affairs, both public and private! The pressure to participate in games as a means of promoting international understanding was very great in the Association’s early days. Indeed Elmhirst’s fellow countryman, A. W. Ashby, felt constrained to record in the proceedings of the Second Conference that ‘I may not play cricket but I certainly shall not play baseball’.¹

Examination of Leonard Elmhirst’s writings and his addresses at the thirteen conferences in which he participated between 1929 and 1967 clearly reveals his strongly-held belief that education and research could work miracles in improving the lot of farmers both in advanced as well as in less developed countries. His periods of service in India and his reconstruction of the Dartington estate in Devon (both of which were achieved with his wife’s encouragement and assistance) exemplify his conviction that significant strides towards the enhancement of human welfare could be made at the village level. Elmhirst was equally convinced that ‘man does not live by bread alone’ – that religious values have a role in human endeavour² and that it is important to cultivate the arts – music, dance, drama, poetry and painting ‘in order’, as he said, ‘to enrich our lives, to liven our aspirations, to inspire our leisure and to increase our delights in every kind of artistic expression’.³

Leonard Elmhirst knew his way through the corridors of power (at least in the British scene) but there is recurring evidence of an impatience with the deviousness of the machinery of government and the ineptitude of some civil servants. In a light-hearted vote of thanks to his former wartime chief, Lord Casey, at the opening of the Thirteenth Conference in Sydney, he recalled with relish the propensity of Casey to cut through bureaucratic entanglements during the years of their association together.⁴ Urgent problems of food production and distribution called, in Elmhirst's view, for understanding and action rather than masterly inactivity. If agricultural economists could tear themselves away from their predilection for the theoretical rather than the applied problem and their fetishism with computers, they could, in his opinion, provide an integrative role in applying science and engineering to improving the lot of farmers and, incidentally, the malnourished.⁵

Allied with Elmhirst's impatience with incompetent authorities was a deep-seated attachment to the intrinsic importance of the pursuit of excellence. Though his courtesy and his commitment to the promotion of international goodwill often constrained him in applying this principle in his personal relationships, he felt no such inhibition when making decisions about his superb 35-acre gardens at Dartington Hall. In describing his planting policy to me during a stroll through these gardens in 1968, he told me his guiding rule was not to 'retain any plant that does not earn its keep'. Edward Hyams in his classic work on English gardens makes the same point as an independent observer. 'One of the most striking features of the gardens [at Dartington Hall]', he wrote, 'is what one might call a negative one: there are no poor plants in it; or, stated positively, only the most distinguished varieties and species have been planted.'⁶

Those of you who were involved in the organization of the Association's meetings prior to the Fourteenth Conference in Minsk, know of Elmhirst's desire that the Association should meet away from what he initially called 'the distractions of the great cities'.⁷ I have participated in some discussions as to what kind of distractions Elmhirst had in mind, but can give no definitive indication as to what they were. I can, however, attest to the fact that some conference participants have found distractions even when conferences have been held in rural areas! Eventually the sheer logistics of large meetings and the need for accessibility meant that the Association had to come to terms with the necessity to hold meetings in urban locations. In his final address to the 1967 conference, Elmhirst decried the urban sprawl and found himself in agreement with Father de Farcy's 'appeal for . . . more quiet places of beauty, for clearer air and purer water, for peace and the delights of being alone'.⁸ Thus long before the conservation movement reached its present crusading proportions, Elmhirst was conscious of the importance of environmental issues.

THE WORLD CONSERVATION STRATEGY

It is to some environmental and related issues that I wish to direct your attention today. In March 1980 under the title, *World Conservation Strategy*, there appeared a statement of considerable international significance. This document was commissioned by the United Nations Environmental Programme (UNEP), which together with the World Wildlife Fund (WWF) provided the financial support for its preparation. Its production was essentially the responsibility of the International Union for Conservation and Natural Resources (IUCN), whose views and approaches it is stated to reflect.

According to the Director-General of that scientific union:

it is intended that the Strategy represent a consensus of policy on conservation efforts in the context of world development. . . . The final draft was submitted to the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Educational Scientific and Cultural Organization (UNESCO) as well as to UNEP and WWF, and all four organizations carefully reviewed it and made significant contributions to it.⁹

In addition, the draft was reviewed by 450 government agencies and conservation organizations in over 100 countries as well as by more than 700 scientists and other experts who are members of IUCN's Commissions on ecology, threatened species, protected areas, environmental planning, environmental policy, law and administration and environmental education.¹⁰

I have cited the document's pedigree in some detail in order to indicate the degree of consultation and consensus that lies behind its production. The report recommends that every country prepare national and sub-national conservation strategies 'to provide a means of focusing and coordinating the efforts of government agencies together with nongovernmental conservation organizations to implement the World Conservation Strategy within countries'.¹¹ Some countries, including my own, already have action of this kind under way.¹²

In a foreword to the paperback version of the Strategy, Sir Peter Scott, the chairman of the World Wildlife Fund, declares that the Strategy was 'the first time that development has been suggested as a major means of achieving conservation instead of being viewed as an obstruction to it'.¹³ David Munro, the Director-General of the International Union for Conservation and Natural Resources, in the preface to the same volume similarly claims that the 'Strategy shows that development . . . depends upon conservation and that conservation depends equally upon development'.¹⁴ In a sense, then, the Strategy does represent the antithesis of the anti-growth and stationary-state prescriptions of some economists¹⁵ whose views many ecologists and environmentalists had supported with crusading zeal in the 1970s.¹⁶ Economists such as myself, who have continued to believe that economic growth is an indispensable prerequisite

to improving the lot of mankind, may be inclined to regard this reversal of direction as a welcome return to rationality.

Unfortunately, however, the Strategy itself contains a curious *pot-pourri* of exaggeration, *quasi*-facts and economic disorientation which should be enough to raise the hackles of even the most sympathetic agricultural economist. For instance the compiler and editor of the Strategy in the opening paragraph of the paperback version makes the remarkable assertion that 'Everywhere fertile soil is either built on or flushed into the sea; otherwise renewable resources are exploited beyond recovery and pollutants are thrown like wrenches into the machinery of climate'.¹⁷ The Strategy says that 'if current rates of land degradation continue, close to one third of the world's arable land will be destroyed in the next 20 years'.¹⁸ This prognosis is strikingly at variance with the FAO estimates published in *Agriculture: Toward 2000*.¹⁹ Clearly the authors of the Strategy documents would have profited from reading Theodore Schultz's 1951 article on 'The Declining Economic Importance of Agricultural Land'²⁰ or Jack Lewis's counterpart address at the 1964 Conference of this Association.²¹

SOME ECOLOGICAL CHALLENGES FOR AGRICULTURAL ECONOMISTS

The *World Conservation Strategy* in my view represents a challenge to agricultural economists to make a more positive input into discussions on conservation. The Strategy epitomises the virtual total disregard by the environmental movement not only for facts about land use and conservation but also for the relevant economic principles. Forty years ago ecology was a respectable field of biological science. In latter years it has become a religion rather than a science, but it still claims the authority normally accorded to the results of scientific investigation. This makes the task of bringing more objectivity to discussions about conservation issues the more difficult but I do believe that agricultural economists should not put the job in the 'too hard' basket.

Forty years ago, the agricultural economics profession was deeply involved in a field then called land economics. The leaders of the profession wrote on important land policy issues including the economics of soil and rangeland conservation. Today the land economists of yore have either gone to their reward or else been transmuted into resource economists who, with a few exceptions, spend their time in airy disputations about externalities, shadow prices and the choice of appropriate discount rates to be applied to future benefits.

Agricultural economists have been too ready to let the environmental movement of the 1960s and 1970s flood over them. They have talked of a change in community values and have tended to leave environmental economics to general economists who, as Leontief and others have pointed out, have less of a penchant than agricultural economists for dealing with applied issues.²² Environmental economics receives a one-page treatment

in the American Agricultural Economics Association's *Survey of Agricultural Economics Literature* on the grounds that 'the field of environmental economics has emerged as an area of specialization in its own right'.²³ In contrast with this nonchalant attitude I would assert that the implications for agriculture of an unfettered environmental movement are so serious and the consequences for world food supplies so enormous that agricultural economists should get back into land and conservation economics without delay and try to bring some economic light to bear on some of the major policy discussions.

Let me spend a little time focusing on some major contemporary environmentally related issues which demand attention by agricultural economists. The UN Strategy statement is an appropriate point of departure. Constraints of space and time preclude my mentioning all the issues raised by the Strategy.

(a) Criteria for determining priorities in conservation policy

To economists the choice criteria which conservationists use in making decisions should be of especial interest. Fortunately the criteria for determining what are called 'priority requirements' and for resolving conflicts are set out in some detail in the Strategy. I quote these so that you will appreciate the nature of the many-headed Hydra with which we have to deal.

Three criteria have been adopted for deciding whether a requirement is a priority: significance; urgency; irreversibility.

Significance is determined by asking such questions as:

how important is this requirement in relation to others for achieving the objective concerned?

what proportions of the global, regional, national population depend on this requirement being met?

how important is the requirement to the people most affected?

how much of a particular resource will be conserved if the requirement is met?

Urgency is a function of the rate at which a significant problem will get worse if the requirement is not met and of the time required to meet the requirement

Irreversibility is the key criterion: highest priority is given to significant, urgent requirements to prevent further irreversible damage to living resources – notably the extinction of species, the extinction of varieties of useful plants and animals, the loss of essential life-support systems and severe soil degradation.²⁴

The task of adhering to such a cacophony of vague undefinable criteria defies the imagination. All sorts of further questions spring to mind. How, for instance, is one supposed to make judgements about the importance of one requirement relative to others? How does one ascertain the importance

the people affected attach to any particular requirement without any resort to the price mechanism? How does one anticipate the rate at which a problem will get worse? I could go on but let me move on to some specific agricultural matters.

(b) Land use and the primacy of agricultural land

I have already referred to the document's concern about the need to reserve 'prime quality cropland for crops' rather than let it be 'drowned by dams or lost to airports, roads, factories or housing. Such conflict', the document says, 'should be anticipated and where possible avoided. Since it is not possible to resite high quality cropland but it is possible to be flexible about the siting of buildings, roads and other structures, agriculture as a general rule should have precedence'.²⁵

Such statements attribute a unique, inflexible and scarce quality to agricultural land which is not only contrary to the facts but also disregards completely the complications of interregional and international competition. The possibility of economic investment as well as of economic disinvestment in land over time is ignored.²⁶ It is enough to make Sherman Johnson (Elmhirst's successor in the presidency) turn in his grave.²⁷

Reservation of prime cropland for agriculture, the document says, 'will reduce the pressure on ecologically fragile marginal lands which tend to degrade rapidly if exploited beyond their productive capacities'.²⁸ One would have thought that the concept of marginal rural land defined in climatic or biological terms passed into the limbo of forgotten things forty years ago.²⁹ Though the document gives specific attention to the problem of desertification it does not really come to grips with the problem of semi-arid range management. 'In arid regions where rainfall and plant growth are erratic,' the report counsels, 'stocking densities must be more conservative than where annual productivity is more consistent.'³⁰ A more rational strategy would be one which varied the intensity of grazing pressure depending on changing pasture conditions from season to season or year to year.

(c) Anti-technology bias

The Strategy advocates organic farming and biogas production mainly on the questionable arguments of 'the growing cost of oil' and the fact that '113 million tonnes of plant nutrients are potentially available to developing countries from human and livestock wastes and from crop residues'.³¹ Traditional cropping systems in developing countries are lauded because it has been demonstrated, so the report says, that 'many of these systems bring high yields, conserve nutrients and moisture and suppress pests'.³² Achievement of these characteristics, of course, does not of itself ensure an economically-sustainable farming system. I am sure Dr Borlaug and his colleagues in the American foundations would be surprised to learn that the original strategy of the 'Green Revolution' was to replace multiple cropping with temperate-style monocultures.³³

(d) Control of pollution

In contrast with conservation documents of the sixties and seventies the Strategy recognises the need for continued use of chemical fertilizers and pesticides. As might be expected the use of direct controls to regulate the discharge of pollutants and use of pesticides is strongly advocated.³⁴ Even so, there is evidence of the typical desire of conservationists to procrastinate on the introduction of new technology on the grounds of inadequate knowledge or unrealistic yearning for zero risk.³⁵ Accordingly the adequacy of testing facilities for pesticides is questioned.

Only transitory reference is made to the use of tax policy as a means of controlling environmental impact. In passing I might add that I believe agricultural economists have been negligent in their failure to point out how the application of the nearly universally advocated 'user pays' principle in a rural context works almost always to the financial detriment of the farmer. This follows if one recognises that a substantial part of the pollution caused by agricultural activities occurs in the processing sector (for example effluents from abattoirs and cheese factories) and notes the economic circumstances which typically assist such processors to pass their added costs back to the producer.³⁶

(e) Endangered species

Adoption of the regulatory policies advocated in the Strategy for the preservation of endangered species, a topic of paramount interest to conservationists, can also adversely affect agriculture particularly if implemented in ignorance. There are, for instance, a few endangered species of kangaroo but the major species of kangaroos are increasing in numbers and are a threat to the environment as well as a major pest of Australian pastoralists. Well-intentioned but basically inappropriate bans on trade in kangaroo skins, such as those enforced by the US Government between 1974 and 1981 in line with principles now advocated in the Strategy,³⁷ are counterproductive to the conservation cause.

The allied problem of animal welfare, though not mentioned in the Strategy, is another case where evangelical fervour is outrunning reason to the detriment of agricultural production. Intensive but low-cost pig and poultry production has been in jeopardy for some time because of the activities of such proselytes. International trade in live animals has likewise become a hot political issue in Australia as a result of an incongruous alliance between animal liberationists and trade unionists employed in abattoirs. Agricultural economists if they are concerned about the economics of production and trade cannot remain aloof from such issues.

(f) Preservation of genetic diversity

The last ten years have seen a tremendous upsurge in the concern of biologists about the need to maintain genetic resources particularly with respect to economic plants. This has been prompted by various things. One is the increasing reliance of farmers on a limited number of varieties. Another is the recurrent tendency of particular varieties to lose their

resistance to pathogens and of pests to lose their vulnerability to specific insecticides. Whatever the arguments for maintaining genetic diversity (including the so-called ethical principle that 'we are morally obliged – to our descendants and to other creatures – to act prudently'³⁸), it is hard to believe that resources should be diverted as profligately to that end as the Strategy contends. Surely the costs of such a policy should be related in some way to the benefits, particularly when the benefits are highly speculative and extremely uncertain.

The Strategy comes out squarely against plant breeders' (varietal) rights. This is an issue which is currently a centre of political controversy in my own country. 'Unfortunately', says the Strategy document,

commercial plant breeders and seed suppliers increasingly are patenting varieties and demanding royalties on their use even though the varieties are as much products of freely obtained genetic diversity as they are of commercial investment . . . Plant breeders' rights and the standardization of plant varieties should be so limited that neither has the effect of restricting the free exchange and use of genetic materials or of reducing genetic diversity.³⁹

This is an issue which agricultural economists should not leave to a three-cornered struggle between the World Council of Churches, multinational agribusiness corporations and professional plant breeders to thrash out. They should be making a more positive input than they currently are,⁴⁰ particularly following the 1980 US Supreme Court decision in *Diamond v Chakrobarty* which allows the patenting of the products of the burgeoning genetic engineering industry.⁴¹ The problem of the consistent treatment of genetic advances which are developed in universities and other public institutions as against those that emerge from commercial firms cries out for analysis. The allied question of the use and abuse of monopoly power in this area also demands attention.

CONCLUSION

Recent assessments by the FAO and the World Bank indicate a more optimistic view of the future world food situation than has been their wont.⁴² Nevertheless governments in the next 25 years are going to be increasingly pressed to make trade-offs between the use of modern technologies to boost food production and the avoidance of damage to the environment. But they cannot afford to accede in an irresponsible way to the wishes of urban-based environmentalists or the scientifically illiterate. As is stated in the 1981 FAO report, *Agriculture: Toward 2000*, 'ecological considerations should not always take precedence over those of increased production'.⁴³

If the absolutists of the environmental movement are to be prevented from getting their way, farmers and their representative organizations are going to need substantial assistance from trained agricultural professionals.

An example of what can be done in this area is provided by the multi-disciplinary Council for Agricultural Science and Technology in the United States which is committed 'to advance the understanding and use of food and agricultural science and technology in the public interest'. I believe agricultural economists in particular, should not be backward in participating in the inevitable confrontations, even if they only go as far as pointing out the adverse economic consequences of the policies of the extreme fringe of ecologists.

Even though we are approaching the fiftieth anniversary of the publication of Lord Robbins's *Essay on the Nature and Significance of Economic Science*,⁴⁴ I still share the conviction of some of our forebears in the profession that politicians need some guidance and leadership when matters of the kind I have been discussing today are at stake. I quote the final words from the address which Henry Wallace, later to become a distinguished US Secretary of Agriculture, delivered at the first Conference of this Association held at Dartington Hall in 1929.

I sometimes feel that our economists in order to affect society in a desirable way should have a modern adaptation of the motives which moved the Hebrew prophets and John Knox to cry aloud. People of this sort change the social scheme of things I hope that agricultural economists will recognize both strong social feeling and sound economic analysis as essential to making the world a better place to live in.⁴⁵

At the 1967 conference in Sydney, Leonard Elmhirst, the man we honour today, spoke in a similar vein and found reason to question whether, and I quote his words, we are 'seeing our role as economists in large enough terms'.⁴⁶

NOTES

¹ A. W. Ashby, 'Response to address of welcome', *Proceedings of the Second International Conference of Agricultural Economists*, Menasha, Wisconsin: George Banta Publishing Company, 1930, p. 16.

² L. K. Elmhirst, 'Stocktaking', *Proceedings of the Thirteenth Conference of Agricultural Economists*, London: Oxford University Press, 1969, p. 444.

³ L. K. Elmhirst, 'The Foundations of Sriniketan' in Rabindranath Tagore and L. K. Elmhirst, *Rabindranath Tagore - Pioneer in Education*, London: John Murray, 1961, p. 43. See also 'Stocktaking', p. 447.

⁴ L. K. Elmhirst, *Proceedings of the Thirteenth Conference*, pp. 4, 445.

⁵ *Ibid.*, pp. 444, 447; *Proceedings of the Fifteenth Conference*, Oxford: Agricultural Economics Institute, 1974, p. 16.

⁶ Edward Hyams, *The English Garden*, London: Thames and Hudson, 1964, p. 242.

⁷ L. K. Elmhirst, 'Statement', *Proceedings of the First Conference of Agricultural Economists*, Menasha: George Banta Publishing Company, 1929, p. viii.

⁸ L. K. Elmhirst, 'Stocktaking', *op. cit.*, p. 447.

⁹ IUCN, *World Conservation Strategy*, Gland, Switzerland, 1980, p. II.

¹⁰ *Ibid.*, p. III.

¹¹ *Ibid.*, Section 8, para. 2.

¹² Commonwealth of Australia, Department of Home Affairs and Environment, *Towards a*

National Conservation Strategy: A Discussion Paper, Canberra, 1982.

¹³ Robert Allen, *How to Save the World*, London: Kogan Page, 1980, p. 7; see also *World Conservation Strategy*, Section 1, para. 9.

¹⁴ *Ibid.*, para. 9.

¹⁵ E.g. J. S. Mill, *Principles of Political Economy*, Vol. 2, London: J. W. Parker, 1857, pp. 320–6; H.E. Daly, *Towards a Steady State Economy*, San Francisco: W. H. Freeman, 1973.

¹⁶ E.g. Charles Birch, *Confronting the Future*, Harmondsworth: Penguin, 1975, pp. 13–58.

¹⁷ Allen, *How to Save the World*, p. 11.

¹⁸ *World Conservation Strategy*, Section I. The source of this remarkable assertion is said to be the United Nations, *United Nations Conference on Desertification: Round-up, Plan of Action and Resolutions*, New York: United Nations, 1978.

¹⁹ Food and Agriculture Organization, *Agriculture: Toward 2000*, Rome, 1981.

²⁰ Theodore W. Schultz, 'The Declining Economic Importance of Agricultural Land', *Economic Journal*, Vol. XLI, No. 244, December 1951, pp. 720–40.

²¹ J. N. Lewis, 'The Changing Importance of Land as a Factor of Production in Farming', *Proceedings of the Twelfth International Conference of Agricultural Economists*, London: Oxford University Press, 1966, pp. 420–7.

²² W. Leontief, 'Theoretical Assumptions and Nonobserved Facts', *American Economic Review*, Vol. 69, No. 1, March 1971, pp. 1–7.

²³ Emery N. Castle *et al.*, 'Natural Resource Economics, 1946–75' in Lee R. Martin (ed.), *A Survey of Agricultural Economics Literature*, Vol. 3, Minneapolis: University of Minnesota Press, 1981, p. 451.

²⁴ *World Conservation Strategy*, Section 5.

²⁵ *Ibid.*, Section 5, para. 1.

²⁶ Charles E. Kellogg and Carleton P. Barnes, 'Farm Land Resources of the United States' in J. F. Timmons and W. G. Murray, *Land Problems and Policies*, Ames: Iowa State College Press, 1950, pp. 53–4.

²⁷ See, for instance, Sherman E. Johnson, 'Farming Systems in relation to Soil Conservation', *Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources*, Vol. VI, Lake Success, 1949, pp. 79–85.

²⁸ *World Conservation Strategy*, Section 5, para. 1.

²⁹ J. D. Black, 'Notes on "Poor Land" and "Submarginal Land"', *Journal of Farm Economics*, Vol. 27, No. 2, May 1945, pp. 345–74.

³⁰ *World Conservation Strategy*, Section 7, para. 11.

³¹ *Ibid.*, Section 5, para. 4.

³² *Ibid.*, Section 14, para. 11.

³³ *Ibid.*

³⁴ *Ibid.*, Section 5, para. 8.

³⁵ *Ibid.*, Section 12, para. 4, on this question see Keith Campbell, 'The Risks of New Technology and their Agricultural Implications' in Glenn Johnson and Allen Maunder (eds), *Rural Change*, Farnborough: Gower Publishing Company, 1981, pp. 261–70 and Keith Campbell, 'The Benefits and Risks of Advanced Agricultural Technology', *Australian Quarterly*, Vol. 54, No. 2, Winter 1982, pp. 100–108.

³⁶ Keith O. Campbell and Brian S. Fisher, *Agricultural Marketing and Prices* (Second Edition), Melbourne: Longman Cheshire, 1982, p. 57 or B.S. Fisher, 'The Impact of Changing Marketing Margins on Farm Prices', *American Journal of Agricultural Economics*, Vol. 63, No. 2, May 1981, pp. 261–3.

³⁷ *World Conservation Strategy*, Section 7, para. 8, and Section 15, paras. 7–8.

³⁸ *Ibid.*, Section 3, para. 2.

³⁹ *Ibid.*, Section 17, para. 12.

⁴⁰ A. P. Ockwell, *Plant Variety Rights – A Review of Issues*, Bureau of Agricultural Economics, Occasional Paper No. 65, Canberra: Australian Government Publishing Service, 1982.

⁴¹ *Diamond v Chakrobarty*, 447 US 301 (1980).

⁴² FAO, *Agriculture*; World Bank, *World Development Report*, New York: Oxford University Press, 1981.

⁴³ FAO, *Agriculture*, p. 130.

⁴⁴ Lionel Robbins, *An Essay on the Nature and Significance of Economic Science*, London: Macmillan, 1932.

⁴⁵ H.A. Wallace, 'Relation of the Tariff to Farm Relief in the United States', *Proceedings of the First International Conference of Agricultural Economists*, p. 180.

⁴⁶ L. K. Elmhirst, 'Stocktaking', *op. cit.*, p. 444.