



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

THE CONTROVERSY ON NORTHERN DEVELOPMENT

ALAN G. LLOYD*

Over recent months Dr Davidson's book¹ has helped spark off a national controversy that has been building up for some years. This review will be concerned not only with Davidson's book, but with the ensuing controversy, especially the replies to Davidson by Dr Patterson, the former Director of the Division of Northern Development.

Davidson is an agricultural science graduate from Melbourne who has specialized in agricultural economics. After working overseas he joined the Division of Land Research and Regional Survey of the Commonwealth Scientific and Industrial Research Organization (CSIRO) which was engaged in assessing the agricultural potential of northern Australia. Since leaving CSIRO he has strongly criticized the organization, and the policy of northern development propounded in many quarters. This very valuable book, written whilst he was working at the University of Western Australia, documents his criticism.

His procedure is to list and discuss the general arguments for northern development, and then to evaluate the specific development proposals that have been made. Each of the six general arguments is either demolished or seriously shaken—viz. land-starved Asians will occupy an unpopulated north; a populated north is easier to defend; land and water are being wasted; northern agriculture could feed hungry Asia, would reduce our import requirements, and would benefit aborigines.

Davidson obviously enjoyed debunking, and this enlivens the book with a propagandist flavour. He points out that "landhungry" Japan would not take the Northern Territory as a gift in 1876; that the White Highlands in Kenya did not attract the Africans until *after* they were developed; that the shortage of food in Asia is far more a question of lack of capital, education and technology than one of land shortage; and that Australia has as much undeveloped land south of the Tropic of Capricorn as north of it.

Davidson also attacks the view that the north is undeveloped for no other reason than neglect, following the historical accident that the south was settled first. He sketches the many attempts at development since the first northern settlements at Melville Is. and Raffles Bay in 1824, lacing the story with interesting tid-bits, such as the tale of the seven tons of sugar produced in 1884, by a luckless Mr de Lissa, at a cost of £20,000.

The argument that northern agriculture should be developed to feed starving Asians and Africans is a particularly dangerous one, because it is as politically appealing as it is superficial. Davidson argues that food for concessional sale or gift to needy nations should be produced as cheaply as possible, and therefore not necessarily in the north, where subsidies would be needed. Further, the crops which might be grown in tropical Australia are all produced, or could be produced by our Asian neighbours. e.g. cotton, peanuts, sugar, linseed, safflower, tobacco, rice. The

* Senior Lecturer in Agricultural Economics, University of Melbourne.

¹ B. R. Davidson, *The Northern Myth (A Study of the Physical and Economic Limits to Agricultural and Pastoral Development in Tropical Australia)*, (Melbourne University Press, 1965), pp. xviii, 283, clothbound; 63s. 0d.

Asians would be competitors, not customers. Davidson points out that most Asian countries must depend on an expansion of agriculture, and especially of agricultural exports, to finance their development. He might have gone further and suggested that the developed nations, including Australia, could assist most by not deliberately increasing their output of such products through subsidies, since this results in the dumping of the subsidized products on world markets, to the detriment of Asia's terms of trade.

The "infant industry" argument, that subsidies for northern agriculture would be temporary, and would disappear as yields increased, is taken by Davidson with a grain of salt. History suggests that once a farm product is subsidized, the subsidy tends to increase rather than decrease, yield increases notwithstanding.

Most of the book is taken up with detailed examination of specific agricultural and pastoral possibilities in the North. After compiling a vast number of budgets, Davidson concludes that none of the crops and cropping systems investigated would give the farmer a reasonable return on his labour and capital (£2,000 and 5 per cent per annum) without a subsidy. The annual subsidy per man permanently employed would range from £2,000 for peanuts to £23,000 for linseed. This reviewer has no first-hand knowledge of the north, and it would be a major research project to check each of the many assumptions made by Davidson over the full range of his investigations, but with a few exceptions his estimates have a *sufficient* ring of truth about them. (The term "sufficient" refers to the margin of error which must be assumed to avoid the conclusion that heavy subsidies would be needed.)

It should be mentioned that the term "subsidy", as used by Davidson, is not confined to assistance from taxpayers via the Treasury. It also covers assistance from Australian consumers in the form of artificially high local prices. Any expansion of subsidized crops through northern development which increased or necessitated exports of the surplus above domestic requirements would have the effect of lowering the average price paid to Australian producers. This would then create pressure to increase the subsidy.

Many of Davidson's budgets are based on experimental data, and therefore have required assumptions about the relationship between farm yields and yields under experimental conditions. After careful research he has estimated this at approximately two-thirds (the ratio varies between different crops and with scale of operations). Prior to Davidson's research, there had been a tendency to ignore the problem, and implicitly assume that the farmer would do as well or nearly as well as the experimenter working on a small scale.

Davidson has some limited optimism, perhaps too limited, for the development of the pastoral industry (including beef roads, crop fattening, and additional fencing and water facilities) and the clearing of Queensland's brigalow to produce beef and grain. He fails to mention a number of other promising possibilities, such as the development of Queensland's 71 million acres of spear grass country with Townsville lucerne. His finding in favour of extensive agriculture (beef) as against intensive agriculture (irrigated crops) will be no surprise to Australian agricultural economists. As Davidson points out, Australia's comparative advantage lies in the former because Australian land is cheap relative to labour.

There are some flaws in the book. In all of his budgets, Davidson overestimates the imputed interest charge by costing at 5 per cent on the full initial capital value of the asset. This is appropriate for non-depreciating assets, such as land, but in the case of those assets for which depreciation is included as a cost in the budget, interest should only be charged on the average written-down value over the life of the asset. However, it could be argued that this error is counter-balanced by the low rate of interest charged. The odd classification of casual labour as a *fixed* cost also warrants comment, and there are some instances of minor carelessness—arithmetical errors and inconsistencies, and incomplete citings of references which make verification rather difficult.

The most publicized part of the book is the chapter on the £38 million Ord River irrigation project. A small diversion dam has already been completed, and twenty commercial farms are operating, in effect, as “pilot farms”, but the Federal Government has so far withstood pressure from the Western Australian Government to provide £30 million for the completion of the scheme. Davidson is quite unequivocal on this project: “It is possible that no settlement in Australia’s history has been commenced with so little chance of economic success.” His estimates of the necessary annual subsidy per man range from £2,200 for double-cropped cotton to £6,200 for dry-season rice, with no charge being made for interest on the headworks. The farmer might earn about 12 per cent on his capital, at the subsidized price of 12.13d. per lb of seed cotton. However, taking a national viewpoint, Davidson makes his calculations at export parity—6.07d. per lb at the farm gate, and import parity—6.33d. per lb (a surprisingly small difference). On an export parity basis the return on capital is *minus* 30 per cent or worse. Yet some of Davidson’s critics seem to take the view that if the farmers make a profit at the artificially supported price, all is well with the project.

Davidson’s main critic is Dr Rex Patterson, former Director of the Division of Northern Development in the Department of National Development. Patterson has distributed a lengthy document attacking Davidson’s general theme, and his arguments have been widely reported in the press. In defence of the Ord project he claims that Davidson has underestimated cotton yields because his data are out-of-date. Actually, Davidson quotes 1963-64 yields (p. 200) of 1,318 lb per acre which were lower than his assumed yield of 1,450 lb. Patterson mentions that since 1962 a new cotton variety has shown marked superiority. This could be an important advance, but new varieties cannot be fully proved in one or two seasons. Similarly, Patterson’s claims for double-cropping from regrowth seem premature on the evidence available, particularly as he ignores Davidson’s arguments that the higher costs involved outweigh the additional returns. The public controversy on the Ord will inevitably be confused (in fact it already is) if only for the reason that it is narrowing down to an argument about future cotton yields. Davidson’s simple budgeting approach is quite justifiable, given the limited data, but unfortunately it obscures the fact that a wide range of yields is possible at varying costs from different fertilizer and seeding rates and cultural practices.

Davidson’s yield estimate of 1,450 lb can be justifiably attacked on the grounds that his assumed application of 2 cwt of sulphate of ammonia is too low. Recent unpublished experimental results suggest that the economic

optimum rate is in excess of 4 cwt. Whilst the higher rate would raise yields considerably, it would increase *immediate* profit only marginally. But much more importantly, it would prevent a long-term decline in the nitrogen status of the soil and a catastrophic fall in yield, thus disposing of one of Davidson's major arguments. Patterson accepts Davidson's figure of £68 per acre for total costs for 1,000 acres. On this basis, and allowing for 4 cwt of sulphate of ammonia rather than 2 cwt, it seems that the break-even yield, assuming unit costs *at import parity* of 6.326d. per lb of seed cotton, is around 2,800 lb per acre. (For double-cropping, the total break-even yield for the two harvests would be much higher because of extra cost). However, a case could be made that the protection would not be "excessive" if yields averaged say 2,200-2,500 lb. Average yields in the first year of operation (1964) were around 1,300 lb per acre and the latest reports indicate a likely average of 2,000 lb in 1965.

The poor reserves of soil phosphorus would quickly become exhausted if these yields continued for a few years. The required application of superphosphate to offset this is unknown, but would not necessarily be prohibitive; e.g. 4 cwt of superphosphate per acre would add only 4 per cent to costs.

It is quite possible that Patterson's optimism about yields on the Ord may eventually be proved justified. However, most objective readers will agree that Davidson has completely justified a "wait and see" policy at this stage—a policy of obtaining a more thorough evaluation of potential from a vigorous research programme and from the continuance of existing commercial farming. After all, the function of the Ord pilot farms is to provide more accurate data. The alternative is to spend another £30 million to complete the project, just in case Davidson's yield estimates are wrong. And Davidson's book must not be allowed to obscure the fact that there are other avenues of investment in northern development already sufficiently proven to justify high priorities. Minerals alone will require considerable public investment, direct and indirect, and the beef industry continues to expand.

On the Ord and on other areas, Davidson has been criticized by Patterson and others for his "once and for all" assumptions about yields. Surely, it is argued, we can confidently predict that yields will increase with improved technology. This is true but inconclusive, since improving technology is not a phenomenon restricted to northern Australia. If yields improve as fast in the south and overseas, the north will be no better off, in terms of comparative advantage. Technology *may* advance faster in the north than elsewhere, and *when* this is demonstrated, heavy Government investment may be justified. A similar answer can be given to the popular argument that product prices will increase as a result of a shortage of food relative to an increase in world population.

Optimists who take the long view (one reviewer mentioned one hundred years) apparently ignore the fact that even very large benefits which accrue in one hundred years will discount to near zero at any reasonable "interest" rate (i.e., an interest rate reflecting the earning power of capital during the period of waiting). But those concerned with the long view can validly claim that we cannot forecast the prices which will be ruling in twenty years for products the north could produce. Therefore, in the interests of flexibility we should expand research, to develop the technology

in the north which will permit us to quickly exploit the market opportunities as they arise. In fact it would be quite reasonable to sacrifice some measure of efficiency in our use of resources to obtain greater stability and flexibility through diversification of our agriculture, whether in the south or the north.

Patterson claims with some justification that Davidson has not proved his contention that, as far as the expansion of cotton growing is concerned, prospects in the north are inferior to those in the south. Surely the answer is that both may be inferior, and that until it is proven otherwise, taxpayers' money should not be diverted from education, defence, etc.

Referring to the cotton bounty, Patterson says: "It is only fair to ask whether farmers in other areas of Australia could also operate without a subsidy?" In a similar vein, but with the addition of the "mateship" mystique, a reviewer in the *Australian* asked: "If the man in the street can afford to help the wheatgrower, the pastoralist, the dairyfarmer, why should he not give a financial hand to the battler who is prepared to try to make something for himself and Australia in the north?"

Of course one can argue a case for helping an *established* industry which is in trouble, in terms of tempering otherwise unavoidable hardship. Yet deliberately setting up a *new* industry or farming area which will need considerable protection is surely in a different category. Do we really need to *create* "battlers" to indulge our mateship?

Some newspaper reviewers have reacted to the difficulties raised by Davidson by regarding them as a challenge which Australians must take up to prove their national virility. Phrases like "having a go" and "recapturing the pioneering spirit" are employed in support of what might be termed a policy of economic masochism. Part of the political appeal of northern development, in a nation of city-dwellers, doubtless lies in the pleasures of vicarious pioneering. One can adventure more comfortably by watching the T.V. western than by becoming a sheriff. Perhaps the "New Frontier" slogan in United States politics was coined with one eye on the electorate's "heroic pioneer syndrome".

To be fair to Patterson, he clearly states his belief that "the development of the north should not be undertaken just for the sake of development . . . economic viability must be an important criterion". Yet his understanding of "economic viability" differs from Davidson's, since he attacks Davidson's use of the "world price" (i.e., unsubsidized) for cotton etc. in calculating value of output *from the national viewpoint*. The world price, says Patterson, is unrealistically low. United States and other producers receive a subsidized price on their home markets, and it would be *unfair* if Australian producers were paid the low export price (which is largely a result of the dumping of surpluses resulting from agricultural protection). This frequently used argument is one of equity rather than economics, and like most arguments on what is "fair", it is inconclusive. In any case, it cannot be allowed to obscure the fact that though low world prices may be unreal, caddish and unsportsmanlike, they are what the Australian economy will actually receive for exports (or pay for imports), and they are apparently here to stay. When the value of the labour and capital used to produce exports is not covered by export receipts, there is nothing unreal about the loss suffered by the national economy (assuming the labour and capital have profitable alternative uses).

The implicit argument that "other countries cheat, through export dumping, so we may do the same" may be useful in international negotiations (especially when we are defending our own dumping) but surely not in economic policy formulation. A more sensible attitude would be—"Given that world prices for certain products are endemically low as a result of dumping, what policy should we follow to maximize our earnings?" From this viewpoint, it would appear more sensible to avoid developing those industries faced with low world prices than to join in the dumping game.

There is an argument which Patterson could have advanced, and which Davidson does not discuss at all, in terms of the "theory of second best".² Some resources employed on the Ord would be otherwise employed in industries receiving significant protection. On this basis one can make out a case for at least some degree of "off-setting protection", not merely on the dubious grounds of equity but on the grounds of efficiency in resource allocation.

Davidson also avoids discussion of the "secondary benefits" of northern development, for which some extravagant claims have been made, and in particular there is virtually no treatment of external economies. In fact he does not attempt to discuss the problem of regional development within a comprehensive theoretical framework. Perhaps this can be justified, since by keeping the economics simple, he has reached a wide audience on an issue of current political importance.

One of Davidson's most serious charges is that the CSIRO has withheld publication of research material unfavourable to northern development. The official reply to this charge was not entirely convincing, and has left some people uneasy.

It is only a slight exaggeration to say that Davidson's book and the interest it has aroused symbolize a new era. The transition has been gradual, but it is clear. Until recent decades decisions on government-financed development schemes, such as irrigation projects and the opening up of new areas, were made largely on the basis of technical factors, flavoured by amateur economics (as propounded by engineers, accountants, and agricultural scientists) and a leavening of parish pump politics (many a dam is a memorial to a swinging seat of the past). Nowadays, properly calculated benefit-cost ratios and returns on invested capital are at least considered and are sometimes decisive, and it is only fair to record that Dr Patterson, as a government economist, has been a major contributor to this improved state of affairs. Non-economic goals will properly continue to play a role, but at least the cost of pursuing them will be estimated.

It is unfortunate that agricultural scientists, economists and politicians seem to be dividing into two permanent camps—pro and anti northern development; the resultant heat is developing more smoke than light.

After discarding all the slogans and fallacies which obscure this issue there still remain a few arguments (several have been mentioned) to justify a *general* premium (perhaps a small one) to be credited to a development project in an isolated under-developed area, whether in the north or the

²R. C. Lipsey and K. Lancaster, "The General Theory of Second Best", *The Review of Economic Studies*, Vol. XXIV, No. 63 (1956), pp. 11-32.

south. But separately within this general policy, each proposal must be argued on its own economic merits, and ranked in some order of priority. Otherwise, "the wheel that squeaks the loudest is most likely to be greased".

It is safe to predict that economists such as Davidson will be accused of "lack of imagination" by those anxious to exploit the "heroic pioneer syndrome". If imagination means uncritical optimism, this is fair comment. But if it means the ability to visualize costly failure as well as success, and to visualize the benefits from possible alternative uses of limited labour and capital resources, then perhaps it is the people riding the development bandwagon who lack imagination.

Asked "Why climb Everest?" Mallory is reported to have replied "Because it's there". A better reason is need for northern agricultural development, if only because unexploited land in southern Australia is there too.

POSTSCRIPT

Since this article was written, Dr Patterson has presented a very detailed paper at A.N.Z.A.A.S.³ Patterson assumes a higher quality cotton than Davidson, and lower ginning costs (resulting from an assumed profitable sale of by-products) and consequently his assumed cotton price is much higher than Davidson's. On this more optimistic basis, Patterson estimates break-even cotton yields, at export or import parity, of 1,751-1,764 lb per acre,⁴ which compares very favourably with the 1964-65 yield of 1,985 lb of *seed cotton*.⁵ However, the attainment of this higher yield has involved some additional costs (especially the spraying of insecticide) and furthermore it appears from the published figures that the yield of *lint* is much lower than the 36 per cent assumed by Davidson.

³ "The Economic Justification of the Ord River Project", 38th Congress, Australian and New Zealand Association for the Advancement of Science, August, 1965.

⁴ *Ibid.*, p. 24.

⁵ *The Australian*, September 27, 1965, p. 3 of *Supplement*.