SPECIAL STUDY No. 7

Canadian Policies for Rural Adjustment

A Study of the

Economic Impact of ARDA, PFRA, and MMRA

by Helen Buckley *and* Eva Tihanyi

prepared for the

Economic Council of Canada

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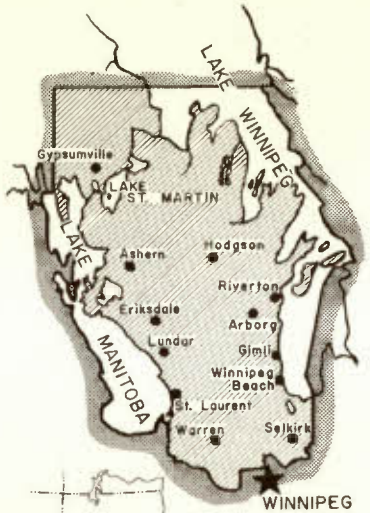

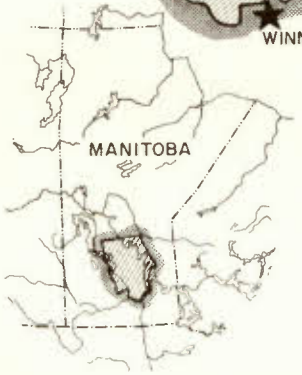

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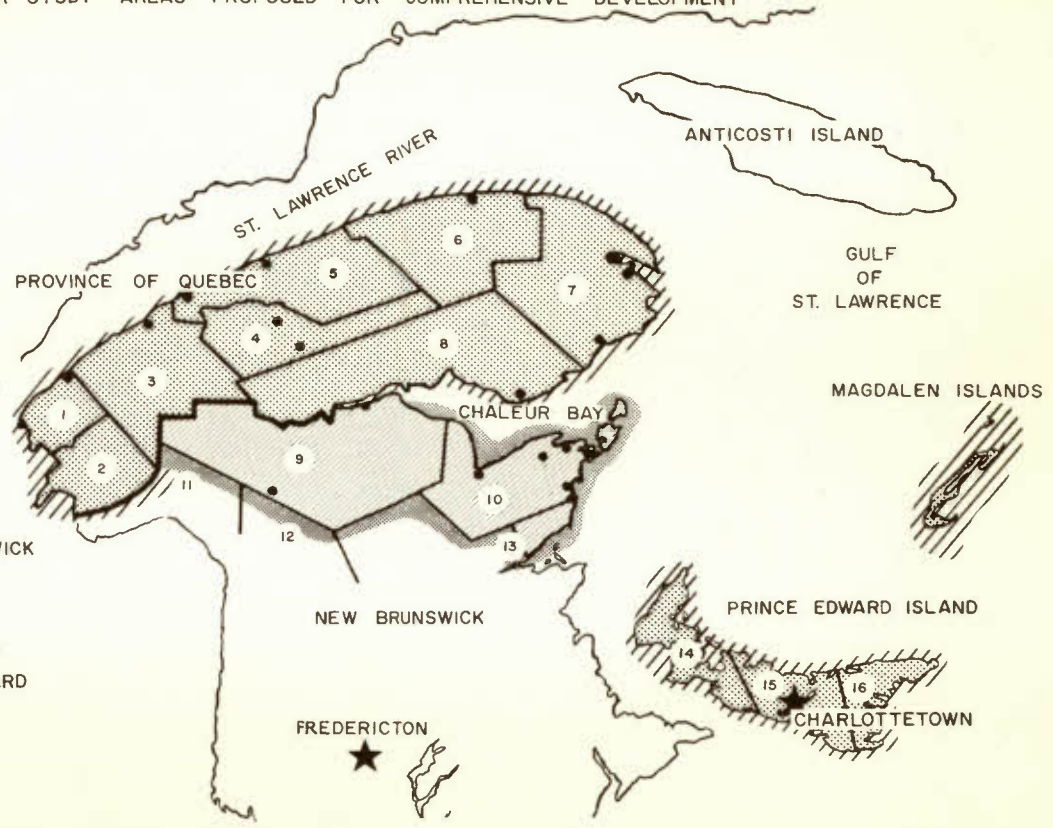

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2 TÉMISCOUATA
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4 MATAPÉDIA
5 MATANE
6 GASPÉ-OUEST
7 GASPÉ-EST
8 BONAVENTURE

NEW BRUNSWICK

9 RESTIGOUCHE
10 GLOUCESTER
11 MADAWASKA
12 VICTORIA
13 NORTHUMBERLAND

PRINCE EDWARD ISLAND

14 PRINCE
15 QUEENS
16 KINGS

CANADIAN POLICIES FOR RURAL ADJUSTMENT:

A STUDY OF THE

ECONOMIC IMPACT OF ARDA, PFRA, AND MMRA

Prepared for the

Economic Council of Canada

by

Helen Buckley and Eva Tihanyi

of the

Canadian Centre for Community Studies

with Special Consultant
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FOREWORD

In the years ahead we can expect to see in Canada a continuation, even an acceleration, of the historical trend towards an increasingly urbanized, industrial society. Along with this there is likely to be a decline in total rural population. In such a society, human resources and human capital, as distinct from physical resources, become ever more important as positive sources of growth and constructive change and the Economic Council of Canada has consequently laid emphasis upon manpower utilization, education and training as crucial elements in our country's continuing growth. A particularly important part of this over-all question concerns the prospect for the fuller and more rewarding employment of rural manpower resources.

The evidence in Canada and many other countries strongly indicates that a rural-urban shift favours advances in average living standards. Nevertheless, public policy on the whole has traditionally been slanted towards resisting this kind of change. It has frequently sought an answer to low rural incomes and interregional income disparity by attempted improvement of the physical resource base rather than appropriate adjustment of manpower resources. In part this is because a declining rural population means that low-income rural areas are left with a smaller base to support adequate community services, including the educational, training, mobility and other manpower facilities that are so vital a part of any programme of "rural adjustment". Successful change implies, therefore, that more and more these areas must rely on the innovation, financial support, and co-ordinated action of the senior levels of government.

The Economic Council is publishing this special study in the hope that it will contribute materially to the current discussion of the role and effectiveness of programmes of "rural adjustment". While the views and conclusions of this paper are those of the authors themselves, it may be recalled that the Council in its

Fourth Annual Review drew on the analysis of this study to emphasize the need for better planning procedures in developing appropriate programmes, "including more precise specification of programme aims when they are introduced and a more adequate evaluation of potential benefits and costs of various approaches". While recognizing the potential effectiveness of recent new approaches towards comprehensive adjustment programmes in specified low-income areas such as Northeastern New Brunswick and the Interlake Region of Manitoba, this study points up clearly the difficulty of achieving an efficient use of funds -- as measured by the benefits to the people concerned -- when the aims of such expenditure programmes are not clearly defined.

Arthur J. R. Smith
Chairman

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The Canadian Centre for Community Studies is a private, nonprofit research organization established in 1957. The two authors are research economists on the staff of the Centre' s Prairie Regional Office, Saskatoon. They were assisted by Dr. Glen A. Mumey, Associate Professor, College of Commerce, University of Saskatchewan, who participated as consultant and also contributed the essay on benefit-cost analysis.

The authors wish to express their appreciation to the Economic Council of Canada for sponsoring this research and particularly to Mr. T. K. Shoyama, a member of the Council' s professional staff, whose assistance and valuable comments eased the difficulties of their task through all phases of this study. Thanks are also due to Dr. J. Dawson and other staff members of the Economic Council who discussed the first version of the manuscript with the authors; and to Mr. W. B. Baker, President, and Mrs. Jane Abramson, Research Director, Canadian Centre for Community Studies, for their continued support and their critical review of the manuscript. Mr. J. F. Kinzel and Mrs. Lila Spencer extended much appreciated editorial assistance.

This study would not have been possible without the co-operation of numerous PFRA and ARDA officials. It is impossible here to give adequate recognition to all persons who freely gave of their time in the assembly of data, description of programmes and expression of opinion. With apologies for the omissions, we wish to thank Mr. M. J. Fitzgerald, Director of PFRA; Mr. D. W. Kirk and Mr. J. E. Beamish, PFRA, Regina; Mr. A. T. Davidson, Assistant Deputy Minister (Rural Development), Department of Forestry and Rural Development; and Dr. Katherine B. Cooke, Mr. L. E. Poetschke and Mr. Roger August, also of the federal ARDA administration. Among many others the following provincial ARDA officials extended valuable assistance: Mr. George R. Smith (Nova Scotia),

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The study is based on data covering the period up to midsummer 1966. Responsibility for facts and opinions in the manuscript rests solely with the authors. Neither the sponsorship of the Economic Council of Canada, nor the authors' connection with the Canadian Centre for Community Studies, implies endorsement by these organizations.

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INTRODUCTION

The objective of this study is to examine how effectively federal programmes under the Prairie Farm Rehabilitation Act (PFRA), the Maritime Marshland Rehabilitation Act (MMRA), and the Agricultural and Rural Development Act (ARDA) have contributed, or appear likely to contribute in the future, to the growth of rural incomes and to the reduction of interregional income disparities in Canada.

PFRA and MMRA have been on the Canadian scene for a number of years. PFRA's record stretches back to the 1930's and includes such varied accomplishments as the provision of community pastures, farm dug-outs, stream-control dams, and irrigation works, for many thousands of farmers, mainly in Saskatchewan and Alberta. MMRA, started during the late 1940's and now almost completed, assured the protection of agricultural lands from salt-water flooding in the Fundy Region of New Brunswick and Nova Scotia. In contrast, ARDA is a nation-wide programme of recent origin under which the federal government, in partnership with all provincial governments, promotes rural research development and adjustments in land use.

The programmes analyzed in this study enjoy the reputation of being important, perhaps the most important, vehicles for public investment to promote basic adjustments in rural society -- i.e., more efficient use of all resources in primary production. But are they? Unless accomplishments can be measured and weighed against feasible alternatives (including no programmes) there is no satisfactory basis for judging that the ones we have are indeed the best or even reasonably effective for achieving desired ends.

Economists in many countries are continuously refining techniques to measure costs and benefits from public investment -- techniques by which the complexities of practical issues are simplified while consistency in the application of economic principles is retained. Benefit-cost

analysis, as this somewhat eclectic branch of economics is frequently called, has improved substantially in recent years; the technical possibilities opened up by computerized analysis have also accelerated attempts to clarify conceptual aspects. Yet unsolved difficulties remain.

It is rarely a matter of simple logic to decide which costs and which benefits should be taken into account and at what prices they ought to be valued. Within the wide spectrum of services which government provides in a modern society, many are so remote from the outputs priced in commercial markets that monetary evaluation of benefits often appears impractical. With others, benefits are traceable but indirect, and quantification in terms of a common denominator could become too involved. The programmes considered here have their share of projects for which benefit-cost analysis might be impractical with available techniques. It will be shown, for example, that substantial ARDA funds were channeled into research. Encouraged by the generally strong pro-research stand of growth theorists, one can expect that prospective benefits are formidable if the research is carried out with competence and its results utilized. But how monetary benefits from any one research project should be determined ex ante is likely to be beyond practical consideration.

By and large, however, the techniques of benefit-cost analysis are developed well enough to permit their routine application to the types of projects that commonly come under the PFRA, MMRA, and ARDA programmes. This is not a suitable framework to elaborate in detail our views on how this should be done; some of the general aspects are discussed in Appendix A. Apart from technical details relating to the way in which the benefits and costs are properly quantified, however, another question arises: what weight should be given to the resulting benefit-cost ratios in programme selection or evaluation?

This question becomes particularly important if the programmes also involve income redistribution among groups in society. Frequently, it is not only society's

total gains and losses which are relevant, but also the identification of gainers and losers. For example: when comparing one project which raises the income of disadvantaged groups with another project which benefits the already prosperous, undifferentiated benefit-cost ratios are not adequate criteria for choosing between the two. It is one of the basic contentions of the present study that the very serious rural poverty problem which exists in all provinces cannot be solved effectively with programmes designed primarily to serve the interests of commercial agriculture. There is room for doubt that ARDA has a clear-cut commitment to solve the poverty problem; nevertheless, the authors regard ARDA as a national programme designed primarily to fill a gap in policies towards low-income groups in rural society -- groups which are linked to commercial agriculture only peripherally, if at all.

The recognition of an important social objective as a goal of a programme does not preclude the simultaneous recognition of economic criteria. The reduction and eventual elimination of rural poverty (or poverty of any kind) in a prosperous society is a public goal with moral and ethical ramifications. But poverty is also a problem of economic efficiency and growth. The ethical considerations entering into anti-poverty programmes are intertwined with pecuniary values for the affluent majority: if groups of people do not produce and consume as much as society's technical know-how will permit, then material progress might slow down for all. In the long run, poverty-reducing investments are likely to have ample returns in terms of the productive efficiency of Canadian society.

Yet it would be an unfortunate oversimplification to say that the Canadian version of the "war on poverty" could be conceived as an investment frontier where planners of public projects can conveniently select from among a number of alternatives the ones which maximize poverty reduction per dollar spent. A government agency that knows, say, how a power generating station can be built so that maximum energy is produced for a given cost would be rightfully blamed

if it proceeded to build a less efficient one. But no agency in Canada today knows how rural poverty can be reduced most effectively. Certain room for experimentation and failure must be allowed; as in any war, some of the battles may be lost. Of course, the quicker it is realized that certain approaches do not effectively serve given objectives, the greater will be the likelihood that partial failure can be turned into success.

In light of the conceptual and technical difficulties of measuring accurately all costs and benefits, and considering also the uncertainties inherent in an honest search for solutions to deep-rooted social problems, one would be hesitant to recommend that planners of public policies translate the general criterion of economic efficiency into a simple rule by which preference is always given to projects with the highest monetary benefits for given costs. What kind of practical rules should be followed once benefit-cost ratios are obtained with reasonable competence is a line of inquiry not undertaken for this study. As a very general guideline, however, we believe that all government agencies should safeguard against commitments that cannot satisfy the minimum standard of economic efficiency implied by a 1:1 benefit-cost ratio.[1/]

To concentrate in this study on such a minimum criterion seems further warranted by a question of principle with respect to federal programmes designed to promote balanced regional growth. Simplifying rather complex technical relationships, one may suggest that giving preference to projects with the highest benefit-cost ratios

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1/ This requirement is not as trivial as it may sound to someone unfamiliar with the principles of benefit-cost analysis. Since costs should be taken as equal to benefits forgone in alternative use of the same resources, a properly attained 1:1 ratio implies "at least the customary returns" to all factors of production. Naturally, all benefits and costs have to be discounted to the present.

will contribute to the maximization of national economic growth but will tend to concentrate development in areas of best potential. If growth is to be balanced spatially, then a constraint is imposed which may prevent the consistent selection of projects with the highest benefits for a given cost. Whether or not the imposition of such a constraint in the planning of government projects is desirable, comments Professor Scott in a different context, "cannot be resolved by economic reasoning. It is not for the economist to say that the whole is more important than the parts."[1/]

Federal assistance in solving pressing regional problems was a central motive for PFRA and MMRA. The formula adopted for the allocation of federal ARDA funds among the provinces, together with the Rural Development Areas and Special Rural Development Areas provisions in the current ARDA Agreement, indicates that ARDA also is expected to advance the cause of regional balance. To achieve this aim, programme planning may have to sacrifice a part of the potential contribution the funds could make to national growth; the question is, how much? It is a guiding principle of this study that while public investment in a poor area may be desirable even if its benefits are lower than those of an alternative project in a richer area, a case cannot be made for relaxing the 1:1 benefit-cost ratio as a minimum standard (assuming that all benefits and costs are properly accounted). Furthermore, if the generation of regional income is the primary concern, then a government project cannot be considered efficient if the same regional benefits could be attained at a lesser cost.

Nor should a project with a benefit-cost ratio of less than unity be justified on the grounds that -- although economically inefficient -- it may be desirable for income

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1/ Paul A. Samuelson and Anthony Scott, Economics, An Introductory Analysis, Canadian Edition (McGraw-Hill Company of Canada Ltd., 1966).

redistributive effects. Tolerance in government anti-poverty programmes for occasional undertakings which may turn out to be ineffective is quite different from using economically unjustified projects as institutionalized vehicles of income transfer to disadvantaged groups. Society has the option of transferring funds directly to persons in need; administrative costs disregarded, recipients of direct transfer payments get monetary benefits equal to the cost to the rest of society, which implies a 1:1 ratio. From this it follows that direct income transfer has greater redistributive effect than an investment which generates benefits smaller than associated costs.

The foregoing points suggest that government programmes designed to promote economic growth, regional balance and equitable income redistribution should, in order to achieve all of these goals, maintain the 1:1 benefit-cost ratio as a minimum requirement.

It should not be inferred, however, that PFRA, MMRA or even ARDA have unambiguously defined the promotion of economic growth, regional balance, and equitable income redistribution as their objectives, and that the only debatable aspect is how effectively the goals are being implemented. Later analysis will demonstrate that the issues themselves are not so clear-cut, and the goals very much subject to conflicting interpretation.

The legislation that created PFRA in the 1930's and MMRA in the late 1940's reflects economic and social concerns some of which are akin to concerns of more recent days. The economist may wish to criticize the preoccupation with land and its "best" uses so obviously dominant in programme formulation, but it should be borne in mind that agricultural policies have traditionally assumed a simple, straight-line relationship between the well-being of people who "live from the land" and improvements to the land. Indeed, this assumption has been so deeply rooted in Canadian thinking that it became and remained a strong factor in ARDA as well.

A study of this type could not undertake the quantification of social benefits attributable to hundreds of projects implemented or planned, nor to determine their social costs (which do not necessarily equal expenditures). We had hoped to rely on the project analyses which the agencies themselves prepared in the course of planning and implementation. Unfortunately, time available did not permit systematic utilization of the project files to which many co-operating officials allowed us access; moreover, the files we did study proved generally disappointing. All too frequently, benefits were stated only in the most rudimentary terms and were seldom supported by evidence. Among the ones seen, only a few benefit-cost studies achieved a satisfactory degree of competence; others appeared to us outright misleading; none were entirely free from a tendency to overvalue benefits. In many cases, therefore, hypothetical simplified examples have been used to illustrate the arguments in the text. In these we attempted to make realistic assumptions, but conjecture can never satisfactorily replace data-supported evidence.

The somewhat speculative method of this study is also attributable to the circumstance that the Canada-wide ARDA effort as yet provides very few conclusive results; any discussion concerning the effectiveness of this programme must involve a certain amount of speculation. The examination of the two older programmes was motivated, in part, by a search for precedents that could help to estimate the probable future impact of ARDA projects of a similar nature.

Chapter 1 summarizes the main conclusions of the study as a whole. Chapter 2 deals with the rural income problem in Canada and contains a cursory review of traditional government policies relevant to it. This is followed in Chapter 3 by an analysis of PFRA and MMRA. Finally, Chapters 4 and 5 are devoted to a discussion of ARDA. Interested readers will find additional material in appendices: an essay on some aspects of benefit-cost

analysis which elaborates a topic treated only briefly in this Introduction; and more detailed statistical and descriptive material about the ARDA programme in the provinces.

CHAPTER 1

A SUMMARY OF CONCLUSIONS

The conclusions emerging from this study are summarized with some reservations. Having to present a critical, and perhaps controversial, view of the economic effectiveness of the PFRA, MMRA and ARDA programmes, it is regrettable that lack of time, insufficient data, and complexities of subject matter have prevented the authors from pursuing the study objective from all important angles.

Many readers may be disappointed, for example, that three major agricultural programmes are examined here with but few references to, and certainly no conclusions on, the broader aspects of federal policies relating to the agricultural industry. Others might have wished to see a more comprehensive view emerging on water policies, in light of the fact that water-oriented investments account for a major proportion of all expenditures incurred under these programmes. The cursory treatment of jurisdictional matters, which have extremely important implications for federal participation in rural development, might also be considered a regrettable omission. Neither this summary of conclusions nor the more detailed text of the study will contribute much to the clarification of these important issues of national economic policy, even though they are rightfully raised in conjunction with the programmes discussed.

The central question this summary attempts to answer is: how significantly do programmes under PFRA, MMRA and ARDA contribute to the solution of the very serious social and economic problems which impose particular hardships on the low-income groups of rural Canada?

The dimensions of the problem are documented in Chapter 2. It is shown there that in contrast to the general technical and economic advances in rural areas, and in spite of a variety of traditional policies purportedly designed to

maintain agricultural incomes, an estimated 500,000 rural families entered the sixties in dismal poverty. Much of this poverty -- particularly in Eastern Canada -- was located in low-income areas, but a substantial proportion of the rural poor resided in relatively prosperous parts of the country.

The need to increase rural incomes and to promote economic adjustments in rural areas was explicitly acknowledged in the Act which established ARDA, the most recent of the three programmes, in 1961; similar intentions were stated in the provincial legislation that followed. At that time, PFRA had operated in the Prairie Provinces for two-and-a-half decades, and the smaller MMRA programme had also had a history of a decade or so in the Fundy Region of New Brunswick and Nova Scotia.

The original formulation of ARDA and the activities subsequently endorsed under it were clearly influenced by these older programmes. On the positive side, one wishes to emphasize their role in establishing precedents for federal intervention on behalf of distressed rural regions. Although PFRA and MMRA were both exclusively federal undertakings, they satisfied strong regional demands for massive federal investment and developed a form of co-operation with provincial and local authorities. In conjunction with some PFRA and all MMRA projects the provinces are in charge of agricultural land utilization and there are other forms of intergovernmental task-sharing. In contrast, ARDA is a joint programme in which provincial initiative and responsibility are greatly enlarged, but the recognition of the federal role in assisting rural development in needy regions remains an element of continuity with the older programmes. Less fortunately perhaps, these older programmes also shaped the particular forms that government intervention was to take under ARDA. During the first years of ARDA, programme content was dominated by PFRA-established policies: improvements in land use and the development of agricultural soil and water resources. That these approaches cannot effectively serve the most pressing needs of the modern era is perhaps the main conclusion of the present study.

The PFRA programme was launched in the drought years at a time when repeated crop failures and widespread farm abandonment gave rise to fears that large areas of Western Canada would be lost to agriculture. What was offered, essentially, was a comprehensive programme of water development and a system for converting to permanent pasture those lands that appeared to be submarginal for crops. Though begun under emergency conditions, the planning was in long-run terms and the work has proceeded, year by year, with few changes to the present day.

Our examination supports the view that the early programmes were highly effective in halting destruction of the soil and in bringing into use improved farming methods. Over the longer run, the chief emphasis has been on water and pasture projects and the chief results (if we exclude the major irrigation projects) have been additions to cattle population and higher income from cattle. Income benefits to straight grain farmers have probably been slight (some cost reduction) but additional allowance might be made for improved farm living (gardens, lawns, pumped water). There have also been important benefits in the form of municipal water supply and recreation uses for Prairie residents.

By and large, we believe, the income added through PFRA programmes has been widely distributed among farmers but in relatively small amounts in most cases. There have been gains for larger operators as well as small, but the care evidenced in limiting the former (for example: community pasture quotas, the 60 acres in a forage plot) suggests that the programme was intended to reach the less prosperous. However, it is in this respect that the programme has probably been least effective when judged by modern standards of an acceptable minimum income. The fact is, the small farmer has been in a weak position to reap the benefits of PFRA programmes because his resources are few. For some pasture patrons, some plotholders and individual irrigators, PFRA helped achieve larger scale, but for many participants the resources added were so minute that income levels were barely raised and prospects for advancement not at all.

Stabilization of income has been a primary goal of PFRA. It was certainly a more important goal than improved distribution of income and perhaps more central than the goal of higher income. Programmes to encourage the development of the cattle industry were as much inspired by the hazards of a one-crop economy as by the desire to increase production. Applying this criterion, the results have been mixed. Though PFRA programmes have been quite successful in helping to increase cattle production, the stabilizing effects were somewhat vitiated by wide fluctuations in cattle prices during the post-war era. Diversification has helped to offset the losses due to crop failure but has added new elements of instability.

Somewhat more ambitious goals were seen for major irrigation projects, which account for more than half of the 30-year total PFRA expenditure of $300 million. The fact that these projects are still in early stages of development makes it difficult to quantify the benefits which may accrue in the long run. Nevertheless, the experience to date shows that the original expectations were overoptimistic in several important respects. Chief of these would be the increase in net farm income attributable to irrigation, the amount of land opened to settlement, and the employment in secondary industry. We would emphasize that the original decisions were taken from very imperfect knowledge of the benefits; they appear to have been much influenced by the then recent memories of drought, and perhaps also by the prevailing view that the problems of farm people must find solution within the farm sector. The fact that no comparable irrigation projects have been sponsored under ARDA may reflect the wider range of policies now available, as well as the recognition that the desired increase in farm income is neither swift nor certain.

In attempting to sum up the PFRA contribution, it is important to bear in mind the larger framework within which the programme has operated and the effect of other factors from which the accomplishments of PFRA cannot be isolated. It is not irrelevant that farm income in the Prairie Region stood above the national average before the thirties --

indicating that the basic conditions are favourable to efficient production in agriculture. The present status also reflects better moisture conditions, buoyant markets, radical improvement in technology, and drastic reductions in farm numbers. In many parts of the Prairies, the average farm runs close to 1, 000 acres and the average investment is above $30, 000. With big machines and new techniques, the dry plains are farmed in ways unknown in the thirties, while over the 30-year period, quarter-section farmers by the thousands have left the scene. In brief, a new balance has been struck with nature, and one that is much more favourable to the farmer than the old.

Placed in this larger framework, the PFRA programme still holds an important place. A few added inches of moisture work wonders for Prairie crops but are of little use to livestock unless the farmer has storage, unless the spring flow on creeks can be saved and used through the summer months. Irrigation will always be a more dependable source than rainfall on the semi-arid plains and the community pasture will remain an important extension of the farm' s resources in many cases. Yet it is quite impossible to see the programme as one that solves the problem of low-income farming. Despite the adjustments sketched above, the fact is that a great many small farms have neither expanded nor disappeared. This may be seen, for example, in Southwestern Saskatchewan, an area where the trend to larger farms was established early, and an area which was the subject of the intensive PFRA water development programme described in Chapter 3: for every 20 low-income farms in 1951, eight had passed out of existence by the 1961 Census, one had become larger, and eleven were present still. These low-income farms remain in all parts of the Prairie Provinces; in half the Prairie census divisions their concentration has been classified as "medium" to "very high" (see Table 2-4).

The persistence of low-income farming on the Prairies must not detract from the solid contributions made by PFRA, whose terms of reference were to assist the farmers of the region. But the heavy reliance placed on the PFRA model

when planning national legislation (ARDA) to combat rural poverty might be judged inappropriate. A main conclusion which might be drawn from the PFRA experience would be the generally slight income improvement small farmers can anticipate from farm ponds, community pastures and similar programmes centred on physical resources. Whereas successful farming on the Prairies rests firmly on scale and efficient management, investment in land and water improvements will seldom produce the increase in either one of the magnitude required.

A second reason why the model deserved closer scrutiny is that the objectives of the thirties are not the objectives of today. Through the early years of PFRA -- and well into the fifties -- diversification was strongly urged by all agriculturalists prescribing for the Prairies, and increased livestock production was widely viewed as the solution for Prairie agriculture. Today's authorities have no such single solution. Looking at the small-farm problem, they are more inclined to stress the low returns associated with small-scale mixed livestock production, and -- while adding cattle may still be advocated -- the better prospect for a great many western farmers is seen to lie in specialized grain production, notably wheat. Moreover, as the latter statement reveals, objectives have shifted not merely in terms of <u>how</u> to increase farm income but also in terms of <u>how much</u>. Two decades ago, it was entirely possible to define effective aid in terms of a small herd to see the farmer through a dry year; today's interest is more clearly centred on the building of an enterprise that can supply a certain minimum income. At the same time, society's definition of what constitutes that minimum income has risen markedly with the higher average level in the economy as a whole.

The MMRA programme originated in the same period which saw the major irrigation projects launched in Alberta under PFRA, and its rationale is similarly characterized by overly optimistic assumptions concerning prospective increases in the productivity of agricultural lands. A strong motivating factor was the desire to provide federal assistance

for the Maritime Region; thus, MMRA followed the logic (but not the techniques and much less the scope) of the PFRA operations in the Prairies.

The present study finds no evidence that the now completed MMRA programme has resulted in extensions to marshland agriculture or in more intensive utilization of the protected lands. The Fundy Region appears to remain an area of land abandonment and low-income farming where the federal investment of $20 million ($255 per acre) for the protective structures alone is unlikely to produce agricultural benefits of a comparative magnitude. There are nonagricultural benefits stemming from the projects which, of course, improve the over-all benefit-cost ratio of MMRA. Transportation benefits deserve particular mention and, with high rates of unemployment in the area, the real social costs of marshland rehabilitation would be well below the nominal expenditures. Again, however, since construction employment and other nonfarm benefits can be had from other kinds of investment, it is the apparent failure to produce significant additions to farm income that is the main reason for concern.

Turning now to ARDA, the first feature which strikes the observer is the gap between early ambitions and the actual scope of the programme over the years covered in this study. By mid-summer 1966, a modest $62 million of federal funds had been committed to the nation-wide ARDA programme and about half of this sum had been actually spent. Only a few provinces have initiated projects to the limit of their federal allotment, mainly those which had on-going programmes eligible for cost-sharing (e. g., community pastures in Saskatchewan, river improvements in Quebec). No more than token efforts characterized ARDA action in a number of provinces under the first federal-provincial agreements which expired early in 1965 and during the first year of the new five-year agreements still in effect. The smallness of scale would be reason alone for doubting that rural productivity, or the narrowing of inter-regional income disparities, could have been significantly affected by the ARDA programmes of the early years.

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A more important reason for doubt is what the writers believe to be a mistaken emphasis. To a considerable degree ARDA project selection has been shaped by a widely held contention that improvements in land use and the development of soil and water resources are the appropriate measures for raising rural incomes and furthering adjustment processes in the rural economy. In the earlier programmes, whose primary aim was to strengthen the agricultural industry as such, it was a major weakness to single out one factor (land) and to make it the basis for all actions. Failure to devote attention to the labour, managerial and capital inputs of the farm business is even more critical with ARDA, which is not simply a programme of industry assistance but one which also undertakes to effect improvements for farm units at the lower levels of commercial agriculture. Still farther down the scale, on the geographic and social periphery of commercial agriculture the reliance on physical resource development has become increasingly ill-suited.

The land-resource-oriented investments, on which the regular ARDA programme so heavily relies, appear to promise benefits in excess of costs more as the exception than the rule (for reasons to be analyzed in Chapter 5). Moreover, from such investments the poorest segment of the rural population will seldom benefit. The fragmented empirical evidence, as well as logical analysis, suggests that few of the ARDA investments in land and water would satisfy either the minimum criterion of economic efficiency or the goal of income redistribution in favour of the poor.

The farm assistance policies advanced by ARDA are remarkable for their tendency to evade the question of what might constitute an effective solution for marginal farm units. In so far as a small farmer may share the benefits of resource programmes at the community level, or obtain assistance for such purposes as clearing land, eradicating weeds or improving woodlots, some help is undoubtedly extended. Offering certain minor kinds of assistance, but providing neither encouragement to leave nor the means to substantially improve scale and efficiency, ARDA farm programmes are judged unlikely to have had any appreciable

impact on the problem of low-income farming. Indeed, it is possible that ARDA has played a part in prolonging undesirable farm situations: the small addition to farm income that ARDA promises could have influenced some farmers to postpone or reject potentially better off-farm solutions.

Yet, there are many reasons why the land resource orientation of the ARDA programme persists. Here we discuss the major ones.

Apart from the possibility of some form of direct payment to residents, governments have two basic ways of promoting the growth of per capita income in an area. The first alternative is to assist "development projects"; in the present context these may be defined as investments in physical capital with the intention of raising output locally. The second alternative, which we would prefer to label the promotion of "labour force adjustment", covers measures that encourage movement out of the area. The potential gain from the second approach is, of course, the greatest if those who move can go to regions with labour-absorptive capacity and if they possess the specific skills there in demand. In the long run, departures from the area of origin will tend to improve the local balance between labour and available physical capital (including natural resources) in favour of the latter, making possible the attainment of higher productivity for the remaining labour force.

Under the conditions prevailing in most parts of Canada, it is likely that a low-income rural area must rely heavily on downward adjustments in the size of its labour supply before significant increases in local productivity and income levels per person can be hoped for. The recognition of this necessity has been very slow to come and is still far from being generally accepted. Out-migration continues to be regarded as a hindrance to improving local standards, partly because so little has been done by senior governments to alleviate some of its truly damaging side effects, and partly because population growth has all too frequently been misused as a measure of political success.

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The ARDA programme is strongly influenced by local preferences which, in many provinces, continue to run strongly in favour of the resource programmes, and against bolder policy experiments bearing the seeds of controversy or threatening vested interests. Viewed from a purely provincial standpoint, there are benefits to be had in resource investments, and these cannot but be enhanced when the federal government pays a large part of the cost. The resource approach is also attractive to communities which are hard-pressed to maintain services in the face of low incomes, declining tax revenues, and the loss of young persons to the city. Provincial governments are not unmindful of such problems, nor do they fail to see that the problem of financing services becomes more difficult, not less, if reduction in the rural labour force is encouraged. There exists, therefore, not only a strong demand for development at the local level but also a similar interest at the provincial level in measures intended to impart greater strength to rural communities.

Throughout the early years ARDA's activities were chiefly aimed at satisfying local desires for development, though action was generally on a limited scale. Even projects referred to in ARDA terminology as land-use "adjustment" tended to be land development schemes promoting some form of intensification. The alternate land-use projects (which accounted for a large proportion of expenditures) seldom aimed at removing underemployed labour from marginal and submarginal lands, although some of the western community pasture developments sought this as a secondary objective. More commonly, however, ARDA funds were used to acquire lands for blueberry production, recreation, reforestation or similar projects, the benefits from which are frequently exaggerated. The justification for many such projects was to salvage lands abandoned as agriculture retreated from marginal areas. There exists a very common -- but erroneous -- zeal for "economy" which cannot tolerate the waste of land but easily overlooks the waste of labour on the tidy parcels of the small farmer.

What seems a misplaced concentration of effort through the early ARDA years is not entirely to be explained

as mistaken diagnosis. An important part of the original ARDA message could be interpreted as saying: "we don't know the solution, but we will underwrite research and implement pilot projects in the hope of finding solutions".

The search for solutions went on during these formative years of ARDA. In fact, few programmes in Canada have ever devoted such energies to social and economic research as did ARDA (e. g., the BAEQ programme in Quebec) and federal funds played an essential role in making this research possible. It was an important side benefit that the issues were kept alive and much debated; this tended to bring about a more favourable atmosphere for change.

While ARDA was not entirely innocent in prolonging many of the popular myths that surround the benefits from resource development, it is a major accomplishment of the programme that it also helped to soften public attitudes towards genuine adjustments in the rural economy. Today, in many parts of Canada, the transfer of labour from agriculture and other rural occupations is more widely accepted as a solution worthy of governmental support. This made it possible to launch major new programmes in New Brunswick and Manitoba shortly after the observation period of the present study ended. The new approaches will be discussed at the end of this summary.

ARDA cannot remain immune from the pressures to provide "development" of a locally tangible nature even if programme planners themselves realize the stronger need for "adjustment". This pressure can easily lead to situations in which economic principles are compromised and projects are accepted for ARDA financing even when they are economically unsatisfactory. Two additional circumstances work in this direction.

First, the regular ARDA programme is still too closely linked to the concept of land development and even in rural development areas allows only a limited choice of alternatives. With authorities under pressure to utilize the allotted funds but having a small range of choices, the result can easily be the selection of a project of dubious merit.

Second, it should be recognized that the combination of resource development with the social objective of poverty reduction can reduce efficiency in the promotion of either goal. In many circumstances, income improvement is urgent; but in a society which is not committed to a general policy of minimum income maintenance and which attaches a stigma to "being on welfare", inefficient projects become acceptable solutions for help. From the hundreds of projects listed in the ARDA Catalogue, it would not be difficult to pick out many in which the taxpayer pays one dollar so that a farmer somewhere in a fringe area can make (say) fifty cents. One wonders how much consolation it provides that he will have to work for it and thus avoid the alleged humiliation of direct income maintenance.

The 1:1 benefit-cost ratio proposed in the preceding Introduction as a minimum criterion of efficiency is not intended as a guide by which the work of those implementing the ARDA programme in practice should be evaluated. In many circumstances, strict adherence to at least a 1:1 ratio would lead to inaction -- a course understandably unattractive to a dedicated public servant. If he selects, say, the least inefficient alternative possible under ARDA to alleviate a poverty situation, is his action less desirable than leaving a pressing social problem unattended?

Only if the executors of public policies are free to choose among all feasible approaches to attain a certain objective can they be expected to give consistent preference to the one that economic criteria recommends. Under too much pressure to provide "development" and with too much constraint on the types of development to consider, they are -- despite the best intentions -- hardly in a position to assure at least a 1:1 benefit-cost ratio in programme implementation.

This frustrating predicament may help to explain the gap between intended and actual adherence to economic principles. According to the current federal-provincial ARDA agreement, for example, development projects approved under certain sections, and all development projects with a total cost of above $100,000, must be subjected to benefit-cost

analysis. The importance of good economics has been frequently emphasized in public statements by leading ARDA representatives. Yet, in everyday ARDA operations, statements of benefits in the most rudimentary terms are apparently acceptable as a basis for evaluating the merits of a project sponsored from ARDA funds. ARDA has sponsored a number of feasibility studies; yet we could not find evidence that systematic research was directed towards ex post evaluation of implemented projects.

The valuable tool of benefit-cost analysis has played a very limited role in PFRA and MMRA operations, and perhaps in government investments generally, until quite recently. The shortcomings stated above are by no means peculiar to ARDA; on the contrary, ARDA at least made some beginning in working out the methods of more rigorously applied benefit-cost principles. However, as annually submitted provincial policies rather than single development projects become the subject of federal-provincial cost-sharing negotiations, there is some danger that this modest beginning will not be followed by full commitment. A drainage assistance policy, grants for clearing or for the construction of ponds, woodlot management services and similar ARDA-sponsored activities are not considered suitable for benefit quantification; yet federal cost-sharing is automatically expected if any province has established a precedent with a similar programme. Frequently our inquiries revealed a resentment against a federal role in benefit-cost evaluation; some provinces would have preferred to treat it as an internal matter at the discretion of the departments in question.

The reorientation in the ARDA programme referred to earlier occurred gradually over the years and culminated in the adoption of certain new programmes. We attempted to analyze these programmes on the basis of the plans as approved, but had no occasion to follow up on the first experiences of implementation.

The farm consolidation and rehabilitation section of the regular ARDA Agreement provided the operative framework for a major new farm programme launched in Ontario

and expected to be followed elsewhere in Eastern Canada, mainly as an element of comprehensive regional programmes. It is hoped that increased scale on the consolidated farms and the additional assistance in credit and management will create units that can provide incomes of a satisfactory level. Departing farmers (whose lands ARDA will purchase for cash) will be able to retire or retrain for other employment.

That ARDA has turned its attention to basic deficiencies in farm structure and organization appears to be a step forward, but there is no assurance that essential changes will result. With the right emphasis, the programme will become primarily a means of labour transfer from agriculture. With the wrong emphasis the programme could become a means to arrest, with further subsidies, the land-abandonment process taking place spontaneously in areas of high-cost, marginal farming.

An outstanding milestone in ARDA's history to date was the launching of the first major comprehensive regional programmes late in the summer of 1966. The idea of programme concentration in selected areas, to be based on co-ordinated research and planning, was always an element of the ARDA programme. Although the most intensive regional research took place in the Gaspé Region of Quebec, the first province to commit itself to long-range regional programmes was neighbouring New Brunswick. These programmes are described elsewhere in this study.

If the first plans reveal the essentials of others to follow, then Canada will finally see, in a number of regions, a co-ordinated application of highly desirable "adjustment" policies combined with prudently designed "development". This is a very important breakthrough.

These first plans approximate what is described in these final paragraphs as an optimum set of rural policies.

An optimum set of rural policies in Canada today must have a vigorous educational and manpower programme as its backbone; the up-grading and mobilizing of the rural

labour force is the most important adjustment process for governments to pursue. Provisions for land-use and farm adjustment could play an important complementary role to a good manpower programme but, without the latter, these provisions will fail to result in substantial income improvement. It appears that the new comprehensive programmes are based on the correct diagnosis that inefficient use of land is the reflection, not the cause, of rural poverty, and that the latter will yield only to measures which improve the quality and utilization of rural labour resources.

The backbone, however, is not the whole skeleton. Manpower policies alone cannot bear the burden of solving the problem of rural poverty in all situations. The removal of excess labour from rural areas and from low-income regions generally will tend to increase earnings for the remaining labour force, but this positive tendency might be countered by the unfavourable repercussions consequent to population decline or stagnation. Areas of continuous out-migration are familiar with such undesirable phenomena as the deterioration of commercial and public services, the concentration of the aged, and other shifts in population structure. The resistance to government-sponsored out-migration is, at least partly, motivated by the real hardships migration imposes on the areas of origin. A firm government commitment to effective manpower policies should be coupled with a firm commitment to share the financial burdens of maintaining a high level of social services, so that the unfavourable effects of out-migration will not be allowed to dissipate the gains from the adjustment process.

It is very much in the interest of society at large that a high standard of social services be maintained in all rural areas even though sparse population makes those services more expensive than elsewhere. This is particularly important with respect to education: if rural depopulation results in substandard educational services, the long-run losses to society are likely to be enormous. A similar argument could be made for maintaining a high level of health services, community facilities and housing. The

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ARDA-provided public subsidies so ineffectively spent for soil and water developments and rural enterprises of dubious merit would command much higher returns if ways were found to channel them into social infrastructure improvements within or adjacent to depressed rural communities. The apparent recognition of this is perhaps the strongest feature of the special area programmes that resulted from ARDA planning.

Realistic rural policies should give recognition to the fact that many poor people have not the ability to make a successful adjustment in a new and unfamiliar environment. Age and poor health are among the more important reasons and both are likely to be prevalent in low-income rural areas. For some groups at least it would be highly desirable to adopt a policy of direct income maintenance. The guaranteed minimum income for farm operators 55 years of age and over who sell their land to ARDA was first adopted in the Ontario consolidation programme. It appears to be a step in the right direction, although it might be suggested that its applicability is too restricted and the proposed income level too low.

Very few of the elements of "optimum" policies described above could be accommodated under the regular ARDA programme; the new comprehensive plans are financed in large measure from other federal and provincial sources. Plainly, the provisions of the federal-provincial ARDA Agreements in effect to 1970 do not fill the most important gaps in policies for rural Canada. The funds made available for rural development cannot be used for the kinds of development which promise the largest returns to society and best serve the long-run interests of rural residents: education, health and other community services. Instead, the funds are channeled into agricultural land and water investments, which have a strong tendency to become hardship payments to primary producers for the lack of commercially justifiable opportunities to expand. By the same token, ARDA funds cannot be used for a comprehensive manpower mobility programme; even the new Agreement's Rehabilitation section could at best serve as a supplement. So it is

that land-use adjustment is promoted instead of adjustments in the rural labour force.

Through the promotion of rural conservation, some ARDA projects are likely to contribute to incomes in a more distant future. While this factor should appropriately raise the value of the benefits considered as relevant, the writers have not encountered evidence of any major conservation inputs being attributable to ARDA, nor do they consider it desirable that the programme concentrate future efforts in that direction. This is suggested for two reasons. First, there is no evidence that present agricultural practices in Canada endanger the future value of rural resources in a significant way;[1/] to the extent that natural resources are in danger, Canadians would be well advised to search for other culprits -- a task well beyond ARDA jurisdiction. Second, it appears that regular ARDA funds are too small to serve the dual objectives of resource conservation and socio-economic adjustments; the combination of these objectives as the responsibility of one agency may perpetuate the misconception that the two are solvable by the same means.

The future will undoubtedly see a concentration of efforts in "special" areas such as Northeastern New Brunswick and Interlake in Manitoba. This is logical enough in view of the concentration of poverty and the limitation on funds available. There could be a danger, however, that the association between rural poverty and regional poverty will become overemphasized as the mainstream of ARDA action shifts into the poor, agriculturally marginal areas, while the rural low-income problem dispersed throughout the rest of Canada is left to "traditional" agricultural policies and to the land resource development projects of the regular ARDA programme.

1/ For this opinion, see H. Van Vliet, Address to the Saskatchewan Resources Conference, Saskatoon, 1964.

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It is not altogether certain how deeply the reorientation in rural policies apparent in the new comprehensive plans will affect the regular ARDA programme; there are few, if any, signs that a shift away from the physical resource orientation will generally characterize ARDA action of future years. Many provinces appear willing to settle for a continuation of the pattern established by the action projects of the early ARDA years, and the new approaches, even though they appear to have general applicability, could easily remain special experiments isolated from the mainstream of Canadian rural policies.

CHAPTER 2

THE RURAL-URBAN INCOME GAP AND CANADIAN AGRICULTURAL POLICIES

A. RURAL-URBAN INCOME DISPARITIES

It is not easy to summarize and demonstrate the severity of the so-called "rural income problem" in Canada. Although statistics on many facets of the problem are available, these are substitutes related to, but never quite standing for, the per capita real income of rural population groups. Farm income data in any detail are scarce and influenced by short-term fluctuations to a considerable extent. Conceptual difficulties stem from the need to include income in kind, and to define "rural" in a meaningful way, and from the unavoidably arbitrary process of deciding who is "poor". In many details, the information is inconclusive and debatable but there is little doubt concerning these essential points: (1) at the time of the 1961 Census, rural incomes lagged seriously behind the income levels attained by the rest of Canadian society; (2) the situation was particularly severe in some regions; and (3) it is most unlikely that the problem has solved itself since the Census.

Our search for a comprehensive measure of rural-urban comparative welfare produced no data sources that were fully satisfactory. The Census of 1961 surveyed incomes of individuals and households in Canada, but farm households were excluded from the sample. The census of agriculture for the same year provided no equivalent indicator of farm incomes; hence, there remained a regrettable lack of coverage on the incomes of 480,000 Canadian farm families.[1/] In an effort to fill this gap, Table 2-1

1/ This is a serious and, in the writers' view, unjustified gap in statistical coverage. Ironically, the most elusive information is not net income from farming but income accruing to farm families from sources other than farming -- data which could have been obtained with relative ease.

brings together the 1961 income data on nonfarm families with the results of a 1958 sample survey of farm family incomes.[1/]

Table 2-1

Income from All Sources of Farm, Rural Nonfarm, and Urban Families, by Province, 1961

Province	Income per Family ($)		
	Farm (1958)	Rural Nonfarm	Urban
Newfoundland	n. a.	2,612	4,636
Prince Edward Island	2,577	3,130	4,646
Nova Scotia	2,255	3,338	4,889
New Brunswick	2,453	3,351	4,832
Quebec	3,119	3,829	5,654
Ontario	4,296	4,598	6,077
Manitoba	3,572	3,564	5,657
Saskatchewan	3,321	3,584	5,417
Alberta	4,281	4,198	5,894
British Columbia	4,175	4,744	5,864
Canada	3,645	3,990	5,796

Source: Farm data based on the 1958 income survey of a 1 per cent sample of single-family farms obtained from Dominion Bureau of Statistics, Agriculture Division. Other data from Census of Canada, 1961.

1/ The 1958 survey (the results of which became known only years later) was based on a detailed questionnaire administered to a 1 per cent sample of single-family farms. For more results, see J. M. Fitzpatrick and C. V. Parker, "Distribution of Income in Canadian Agriculture", Canadian Journal of Agricultural Economics, 1965, Volume VIII, No. 2. Partly as the result of the 1958 survey, a change in the definition of census farms was adopted by 1961. This might have had the effect that some families on small farms covered by the 1958 survey were included with the nonfarm sector in 1961. Our attempt to combine these two data sources into a coherent picture of family incomes in Canada should be taken with due reservations.

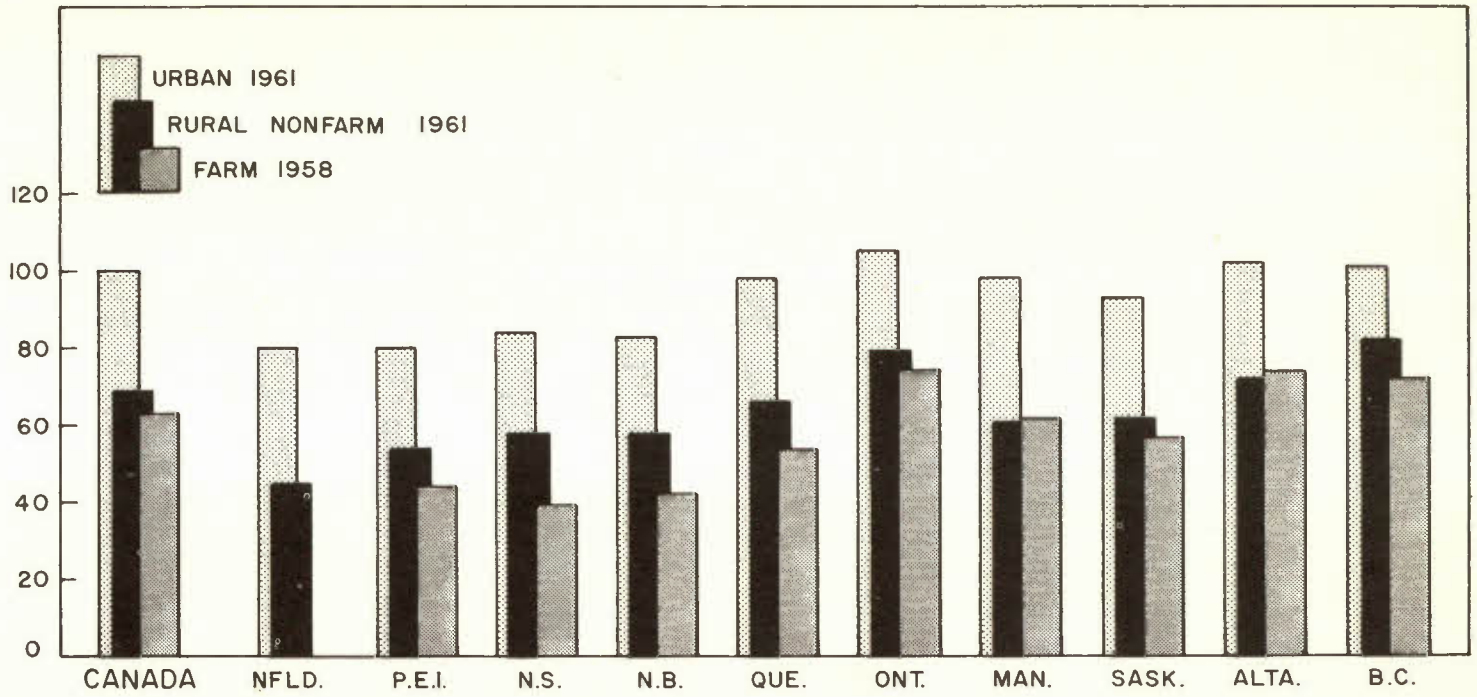
Table 2-1 reveals a gap of considerable magnitude between rural and urban family incomes. Taking the 1961 Canadian urban income of $5,796 per family as 100, the rural nonfarm average was 69 and the rural farm average 63 per cent (Chart 2-1). Subject to uncertainties and incomparabilities in the data, one may say that the Canadian rural living standard was roughly a third below the urban. A somewhat different way of measuring the gap yields very similar results (see Appendix B).

Rural-urban income disparities in Canada were apparently compounded by geographic variations. Note, for example, that the average farm family in Nova Scotia, subject to the double disadvantage of living in one of the lower-income provinces and depending for its livelihood on a declining industry, had a total income of $2,255 -- less than half the average urban family income of any province. This occurred even though the farm figures include all sources of income (such as imputed rent for the farm home, off-farm earnings, pensions and government payments, etc., in addition to net returns from the sale of agricultural products).

Further data assembled in Table 2-2 indicate that, within specific location and farm-sales categories, off-farm sources played significant roles in income maintenance. This was particularly true for small residential farms, but even on those with sales above $1,200 annually (the census definition of a commercial farm) the average family had a relatively large proportion of income from off-farm sources. For instance, in the $1,200-$2,499 category, off-farm sources provided over half the total family income; the proportion went as high as 69 per cent in Ontario, 63 per cent in Nova Scotia and 57 and 55 per cent in New Brunswick and Quebec, respectively. Note also that in the lower sales categories, the over-all income position of farm families did not substantially improve with greater farm sales. Factors such as differences in age structure, type of farming, etc., may have contributed to this anomaly.

CHART 2-1

RELATIVE LEVELS OF INCOME CANADA AND THE PROVINCES



Note: Based on Table 2-1.

Table 2-2

Farm Family Income from Farm and Off-Farm Sources,

Classified According to Value of Products Sold, by Province, 1958

	Value of agricultural products sold					
	Less than $1,200	$1,200 -2,499	$2,500 -4,999	$5,000 -9,999	$10,000 and over	Total or Average
Canada						
No. of holdings (000)	108.8	99.9	133.6	98.7	42.6	483.7
Farm family income $	2,417	2,445	3,087	4,725	8,847	3,645
From farming %	14	47	69	80	85	64
Prince Edward Island						
No. of holdings (000)	2.3	1.7	2.1	1.1	.3	7.5
Farm family income $	1,766	2,222	2,386	3,855	7,625	2,577
From farming %	23	48	70	79	81	59
Nova Scotia						
No. of holdings (000)	7.5	2.5	2.8	1.7	.6	15.2
Farm family income $	2,142	2,193	2,264	2,761	4,093	2,255
From farming %	15	37	56	59	83	37
New Brunswick						
No. of holdings (000)	9.7	2.2	2.5	1.4	.3	16.2
Farm family income $	2,531	2,605	2,345	4,268	4,657	2,453
From farming %	15	43	58	80	80	40
Quebec						
No. of holdings (000)	25.3	27.3	30.2	17.8	5.2	105.9
Farm family income $	2,418	2,558	2,913	4,350	6,460	3,119
From farming %	17	45	69	78	82	58
Ontario						
No. of holdings (000)	22.0	20.6	32.0	28.0	16.1	118.6
Farm family income $	3,038	2,682	3,575	5,060	8,193	4,296
From farming %	5	31	57	75	82	59
Manitoba						
No. of holdings (000)	9.2	10.2	14.3	9.0	2.1	44.9
Farm family income $	2,051	2,047	3,468	5,425	10,282	3,572
From farming %	18	60	81	89	88	74
Saskatchewan						
No. of holdings (000)	10.8	17.8	27.8	22.5	7.5	86.5
Farm family income $	1,760	2,210	2,593	4,181	8,306	3,321
From farming %	34	66	78	83	85	77
Alberta						
No. of holdings (000)	11.3	14.8	18.7	13.7	8.4	67.0
Farm family income $	1,889	2,418	3,107	5,363	11,604	4,281
From farming %	24	55	75	85	91	77
British Columbia						
No. of holdings (000)	10.6	2.6	3.2	3.4	2.0	21.9
Farm family income $	2,930	2,924	3,749	4,854	11,988	4,175
From farming %	3	31	63	77	84	48

Note: Figures may not add to totals due to rounding.

Source: Data obtained from Dominion Bureau of Statistics, Agriculture Division, Farm Finance Section.

It is also possible that, under certain conditions, efforts to raise the size of the agricultural enterprise did not pay off because they reduced off-farm earning potential more than they increased net farm receipts.

In the Prairie Provinces, off-farm income sources were much less significant; they accounted for only 26 per cent of the average farm family income in Manitoba and 23 per cent in Saskatchewan and Alberta.

Figures drawn from the 1958 survey do not lend themselves to precise estimates of the extent of farm poverty in Canada, though certain rough guidelines emerge. As a first approximation, one would reasonably consider as poor the 209,000 families whose average income from all sources was just over $2,400 (first two columns). Some of these families, however, may have had income in excess of $3,000 (generally considered to be the "poverty line") while incomes of less than $3,000 would doubtless be found in the next higher category (gross sales $2,500-$4,999).

The original and perhaps most widely known ARDA estimates on the extent and geographical distribution of farm poverty[1/] arrived at the substantially lower figure of 95,000, using 1961 Census statistics and the following definition of a low-income farm: "farms with a total capital value of less than $25,000, gross sales of agricultural products of less than $2,500 a year, and off-farm work by the operator of less than 25 days a year". There are several reasons for believing that this definition was too restrictive. For example: families in the sales category $2,500-$4,999 (Table 2-2) received a mean income of $2,130 from farming (69 per cent of $3,087); if the operator had less than 25 days off-farm work, it is

1/ Social and Economic Disadvantage in Canada: Some Graphic Indicators of Location and Degree, Canada, Department of Forestry, October 1964.

quite unlikely that total family income could have reached $3,000. Yet the 133,000 farmers in this sales category were excluded in toto from ARDA's estimate of farm poverty.

Although ARDA statistics on farm poverty were extremely conservative, the fact that they were based on incomplete knowledge of all income sources raised doubts as to the real severity of the situation. One cannot help feeling that the lack of firmer income data for farm families gave the public conscience an excuse for not taking the plight of low-income farmers seriously enough. One such escape has been the assumption that such sources as incomes in kind, part-time employment, work by family members or welfare payments, if all known, would put a significant proportion of small-farm families above the poverty line. The 1958 survey data make this proposition very tenuous. True enough, the proportion of income from off-farm sources was large; but total income nevertheless remained low. Thus, Table 2-2 indicates that 108,800 families, selling agricultural products worth less than $1,200, obtained 86 per cent of their incomes from other sources but averaged only $2,417 total income. In the next category, 99,900 families, with 53 per cent off-farm income, averaged $2,445 total income.

The foregoing suggests that the original ARDA definition identifies only the "hard core" of farm poverty among full-time farmers. Partial adjustment has subsequently been made by ARDA. To define a low-income farm in the formula for allocating federal funds, ARDA now uses the unchanged capital value of $25,000, but gross sales of $3,750. On that basis, the number of low-income farms for Canada as a whole comes out close to our previous estimate from the 1958 farm income survey. In Table 2-3, where rural farm and rural nonfarm poverty are both shown, the revised ARDA figures have been used.

Table 2-3

Rural Poverty in Canada, by Province, 1961

Province	Total Rural Families	"Poor" Rural Families[1]		Total "Poor"
		Farm	Nonfarm	
Newfoundland	43,614	808	28,900	29,708
Prince Edward Island	14,680	4,482	4,035	8,517
Nova Scotia	73,542	7,174	31,063	38,237
New Brunswick	63,968	6,839	27,476	34,315
Quebec	246,690	55,766	69,010	124,776
Ontario	318,870	42,463	59,440	101,903
Manitoba	72,437	19,047	15,680	34,727
Saskatchewan	117,169	36,544	23,598	60,142
Alberta	105,422	26,520	15,963	42,483
British Columbia	101,715	6,623	23,312	29,935
Total	1,158,107	206,266	298,477	504,743

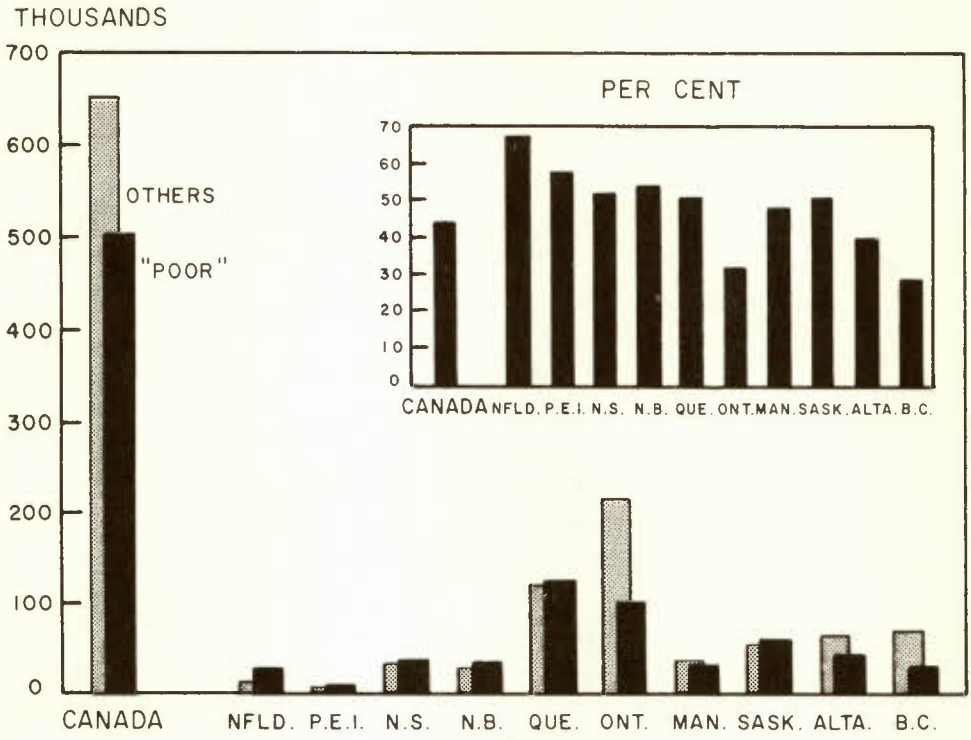
(1) "Poor farms" are those with a total capital value of less than $25,000 and gross sales of agricultural products of less than $3,750. "Poor" rural nonfarm families are those having income from all sources of less than $3,000.

Source: Census of Canada, 1961; and Federal-Provincial Rural Development Agreement, 1965-70, Department of Forestry, Ottawa, p. 26.

According to the data in Table 2-3, at the time of the 1961 Census, 500,000 rural families or 44 per cent of all families residing in rural areas of Canada were poor. In absolute terms they formed the largest groups in Quebec (125,000), Ontario (102,000) and Saskatchewan (61,000). Relatively, rural poverty was most extensive in the Atlantic Provinces (68 per cent of the rural families in Newfoundland and well over 50 per cent in the rest), with Quebec, Manitoba and Saskatchewan reaching about 50 per cent. Only in Ontario, British Columbia and Alberta, was poverty less extensive than the Canadian average of 44 per cent (see Chart 2-2).

CHART 2-2

RURAL FAMILIES CLASSIFIED AS "POOR", BY PROVINCE, 1961



Note: Based on Table 2-3.

Geographical distribution has important implications for policy. If the rural poor are concentrated in specific regions or subregions, the programmes can be concentrated in certain areas. However, if rural poverty is widely dispersed among all regions, a real concentration will leave the majority of these people untouched. To throw further light on the spatial dimensions of the rural income problem, we have classified counties and census divisions according to the proportion of the poor within the total farm and non-farm populations. Due to a lack of data in suitable geographical detail it is necessary to switch definitions again:

the statistics in Table 2-4 are based on ARDA's original estimates (which we call "hard core" farm poverty); in Table 2-5, the rural nonfarm poor are represented by the number of male wage-earners earning less than $2,000 during the year preceding the 1961 Census.

Of 236 Canadian counties and census divisions with agriculture, the "hard core" of farm poverty accounted for a "low" percentage (less than 10) in only 15 and a "low medium" percentage (10-20) in 65; most of these relatively prosperous farming areas were located in Ontario and the West. "Medium" (20-30 per cent) farm poverty concentrations prevailed in 85 subregions scattered across all provinces. "High" (30-40 per cent) concentrations existed in 58 countries and "very high" (over 40 per cent) in 15 countries. Quebec and the Atlantic Provinces were most heavily represented in the latter two categories.

The geographical dispersion of rural nonfarm poverty (see Table 2-5) shows an essentially similar picture although the two tables are not strictly comparable. High and very high poverty concentrations characterized almost all of Newfoundland and Prince Edward Island and numerous subregions of Nova Scotia, New Brunswick and Quebec. Farther west, rural nonfarm poverty concentration appears to decrease. Particularly in Ontario and British Columbia, a substantial number of low-income rural wage-earners resided in areas where they constituted a relatively small minority.

Data presented in both tables indicate that the problem of low rural incomes can be associated to a degree with the problem of poor regions, but if this association is over-emphasized, attention may be unduly diverted from the dispersed, but in absolute numbers still very substantial, poverty problem in prosperous regions. Although over one third of the "poor" farms in Canada were located in areas where their proportion was so high that the areas themselves could be classified as poor, almost another third of the poor farms were located in areas where the opposite was true.

Table 2-4

Rural Farm Poverty in Canada,

by Counties, 1961

Province	Relative concentration of "hard core" farm poverty by counties (census divisions) (1)					All Counties with Census Farms
	Low	Low Medium	Medium	High	Very High	
	Number of counties					
Newfoundland	-	-	3	4	1	8
Prince Edward Island	-	-	-	2	1	3
Nova Scotia	-	1	8	9	-	18
New Brunswick	-	1	5	6	3	15
Quebec	-	15	29	25	6	75
Ontario	9	21	20	3	1	54
Manitoba	-	8	5	4	3	20
Saskatchewan	1	9	5	3	-	18
Alberta	5	4	4	2	-	15
British Columbia	-	6	4	-	-	10
Total	15	65	83	58	15	236
	Number of "poor" farms in each county category					
Newfoundland	-	-	55	291	2	348
Prince Edward Island	-	-	-	1,718	599	2,317
Nova Scotia	-	10	1,040	1,971	-	3,021
New Brunswick	-	124	731	1,384	769	3,008
Quebec	-	2,537	8,327	11,821	1,642	24,327
Ontario	1,827	7,475	6,825	1,446	295	17,868
Manitoba	-	2,502	2,127	2,625	2,936	10,190
Saskatchewan	403	5,754	8,218	4,463	-	18,838
Alberta	1,212	3,640	6,522	1,729	-	13,103
British Columbia	-	1,739	651	-	-	2,390
Total	3,443	23,781	34,495	27,448	6,243	95,410

(1) Column headings refer to "hard core" poor farms as a percentage of all farms in the county. Low: 0-10 per cent; Low Medium: 10.1-20 per cent; Medium: 20.1-30 per cent; High: 30.1-40 per cent; Very High: 40 per cent and over. Counties classified under each category are identified in Appendix B.

Source: Unpublished census material obtained from federal ARDA. For a graphic presentation of this material, see Economic and Social Disadvantage in Canada, Canada Department of Forestry, 1964.

Table 2-5

Rural Nonfarm Poverty in Canada,

by Counties, 1961

Province	Relative concentration of low-income rural nonfarm wage-earners by counties (census divisions) [1]					All Counties
	Low	Low Medium	Medium	High	Very High	
	Number of counties					
Newfoundland	-	1	-	2	7	10
Prince Edward Island	-	-	-	1	2	3
Nova Scotia	-	2	2	9	5	18
New Brunswick	-	1	5	2	7	15
Quebec	2	14	27	17	15	75
Ontario	3	26	13	2	-	44
Manitoba	1	6	8	4	1	20
Saskatchewan	-	8	8	2	-	18
Alberta	1	11	3	-	-	15
British Columbia	4	6	-	-	-	10
Total	11	75	66	39	37	228
Number of "poor" rural nonfarm male wage-earners in each county category						
Newfoundland	-	265	-	5,110	9,898	15,273
Prince Edward Island	-	-	-	1,328	1,607	2,935
Nova Scotia	-	3,326	2,987	8,981	5,229	20,523
New Brunswick	-	449	4,633	2,720	13,497	21,299
Quebec	109	4,004	20,819	12,952	17,510	55,394
Ontario	10,655	22,946	8,895	1,914	-	44,410
Manitoba	230	2,829	4,012	1,532	83	8,686
Saskatchewan	-	4,257	5,198	1,325	-	10,780
Alberta	170	7,047	2,383	-	-	9,600
British Columbia	7,985	6,782	-	-	-	14,767
Total	19,149	51,905	48,927	35,862	47,824	203,667

[1] Column headings refer to male wage-earners with wage earnings less than $2,000 in 1961 as a percentage of all wage-earners in the county. Low: 0-20 per cent; Low Medium: 20.1-30 per cent; Medium: 30.1-40 per cent; High: 40.1-50 per cent; Very High: 50 per cent and over. Counties classified under each category are identified in Appendix B.

Source: Census of Canada, 1961. For a graphic presentation of this material, see Economic and Social Disadvantage in Canada, Canada Department of Forestry, 1964.

The preceding data on rural incomes are six to nine years old and reflect the situation at about the time when the ARDA legislation was passed (June 1961). During the intervening years, Canada has experienced generally high employment and rapid growth in production, with spectacular increases in output in the primary sectors. The physical volume of agricultural production, for instance, has remained above 150 (1949 = 100) each year since 1962, a level never reached in any year prior to 1962.[1/] Over the 1962-65 period, net income accruing to farm operators was approximately $300 million more annually than the $1,200 million net income in 1958, a close-to-average post-war year.[2/]

One can only speculate how these impressive gains for the industry as a whole may have affected income distribution in agriculture and the situation of low-income farmers. It will be borne in mind that a relatively small segment of all farms supply the bulk of the Canadian agricultural production; in consequence, the benefits from increased production tend to accrue unequally to small and large producers. For example, if each farm represented in Table 2-2 retained its 1958 share of the total, then a $300 million net income increase would have been distributed as shown in Chart 2-3.

This hypothetical distribution, assuming unchanged market shares for each category, demonstrates that increased production would have raised the mean income of large producers by four times as much as for an

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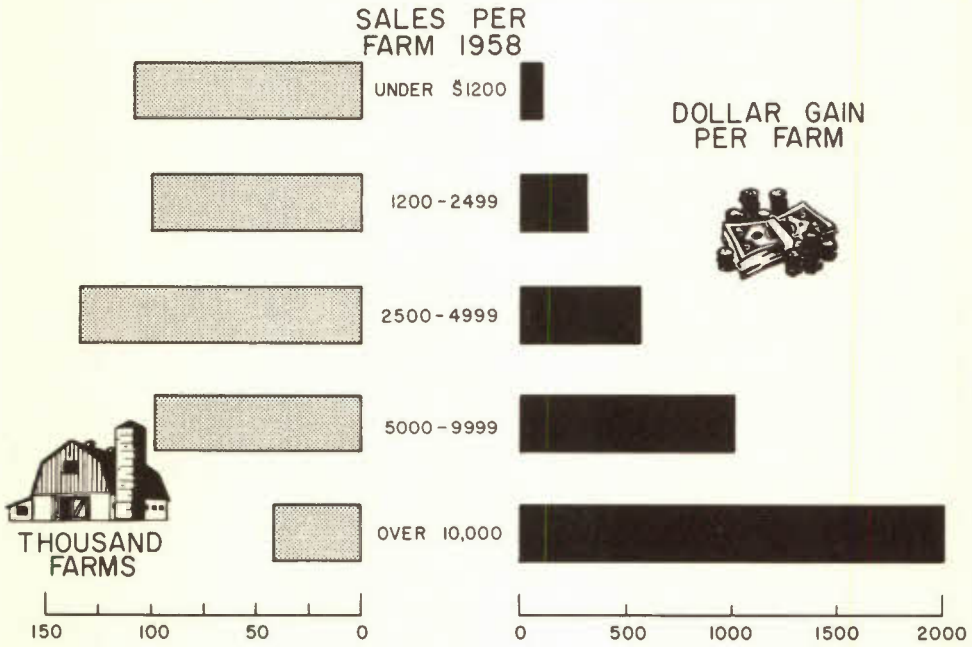
1/ See Index Numbers of Physical Volume of Agricultural Production, Agriculture Division, Dominion Bureau of Statistics.

2/ On "Accrued Net Income of Farm Operators from Farm Production", see Dominion Bureau of Statistics, National Accounts, Income and Expenditure (Annual), Table 24. The figures are subject to further revision.

"average" farmer. It also shows that small enterprises would have gained very little. In reality, however, the number of all farms probably decreased very substantially after 1958 (partly as a result of definitional changes prior to the 1961 Census) with large producers further increasing their share of total production. For the 209,000 farms at the lower end of the scale in 1958, the key question is not whether they maintained a proportional share of the market and thus received the minor amounts indicated in Chart 2-3, but whether a sufficient number of them managed to augment income from off-farm sources or get out of farming altogether. For the next group (sales of $2,500-$4,999), farming during these favourable years offered a chance to increase income from agriculture by a more substantial amount: some among them -- those who could expand production -- were likely to stay above the poverty line.

CHART 2-3

HYPOTHETICAL DISTRIBUTION OF A $300,000,000 ANNUAL NET INCOME GAIN AMONG CANADIAN FARMERS



Note: Calculations are based on Table 2-2, on the assumption that farm numbers and market shares remained unchanged since 1958. There are reasons to believe that in reality the gain for large farms was even greater but suitable data are not available.

There is no way of estimating how the generally buoyant economic conditions of the last five years affected the situation of the 298,000 rural nonfarm families classified as poor in 1961 (Table 2-3). The difficulty lies in the extremely heterogeneous structure of "rural nonfarm" as a residential class; it cannot be associated with any occupational or industrial category of the labour force.

B. SOME VIEWS ON THE RURAL PROBLEM

The foregoing data reveal widespread impoverishment in the rural sector of the Canadian economy. Only recent evidence was cited but the situation is of long standing and resembles the experience in many other countries.

Economists are generally in agreement about the manner in which poverty is being recreated in agriculture and other primary industries as an unwanted but persistent by-product of the very rise in productivity that is the foundation of the wealth of industrial societies. Demand for food tends to rise more slowly than the technical ability to produce it, and resources devoted to its production become redundant. The resulting "price-cost squeeze" is a signal through the market mechanism that a reallocation in the use of labour, capital and land is necessary.

The continuous pressure for downward adjustments in labour inputs and the need for shifting the input mix in favour of capital and managerial ability differentiates primary producers into three main groups. Those able to increase the scale of production and adjust to the use of modern technology can maintain a level of living comparable to, or better than, the average level of the rest of society. Others find nonrural solutions: they leave farming, fishing, and similar traditional occupations or derive sufficient supplementary income from

other sources. The third group comprises those who may try both but succeed in neither and as a result fall further and further behind the rest of society.[1/]

The question is why this third group contends with lower incomes when it appears that by moving from rural to urban labour markets their disadvantage could be lessened. Many who offer explanations deny irrationality and "barriers" to movement, contending that the apparent immobility of the rural poor reflects a choice consistent with their own best interest. One variation to this theme is the frequently suggested occupational preference, or psychic income, associated with country life which might compensate for the monetary income deficiency. Another conjecture is that the rural poor offer for sale an inferior type of labour which would not be more remunerative and hence more productive in an urban market.

Both of these opinions are supported by some empirical observations. When 73 Eastern Ontario farmers were asked (1) what level of annual incomes they would accept as adequate on the farm and (2) how large an annual income in a city would induce them to relinquish farming, the difference between the two amounts had a relatively

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1/ It must be emphasized, however, that apart from, but associated with, the economic processes which render some small primary producers obsolete, other factors also enter into rural low-income situations. To mention some: (1) rural areas have a relatively high concentration of the elderly, (2) some rural groups live in geographic, racial and ethnic isolation, and (3) some low-income groups appearing as rural in the statistics belong to the somewhat different world of urban poverty. The latter includes low-income residents in villages and towns with a total population of less than 1,000 and in settlements beyond the incorporated limits of cities not classified as "metropolitan" or "major urban" by the census.

high mean value.[1/] Part of this difference can be taken as expected compensation for the physical inconvenience and the real costs of a move, the rest as the perceived money value of farming as a "way of life" and the associated utility of not having to adjust to a new environment.

The fact that rural people generally have fewer years of schooling than their city counterparts lends some credence to the argument that their labour in an urban setting would be low on the productivity scale. Studies have shown that a substantial segment of rural migrants indeed fail to improve their living standard and some return; these futile attempts convince many non-migrants that they would gain little from transferring to the city.

The concentration of the poor in rural areas is frequently attributed to causes which in one way or another belong under the heading of "labour market imperfections". Some writers suggest that rural people who are far from the centres of growth tend to remain ignorant of alternative opportunities; that they lack money to move and to finance the transition period even if long-term gains from a transfer are foreseen and desired. Blame for reducing the incentive to move is frequently put on a variety of

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[1/] The results of this survey conducted in 1960 by the Canada Department of Agriculture were quoted by V. Gilchrist at the Federal-Provincial Conference on Farm Enlargement and Consolidation, January 24-25-26, 1966. The 73 full-time farmers from Stormont and Perth counties interviewed regarded $2,800 as an adequate net income on the farm (including value of income in kind) and at least $4,300 as the minimum which would induce them to nonfarm occupation. See Proceedings of the Federal-Provincial Conference on Farm Enlargement and Consolidation, January 24-25-26, 1966, Department of Forestry Publication No. 1152, Ottawa, Ontario.

subsidies and assistance payments, conditional upon remaining in the existing situation. A variation of the market imperfection theme is to regard rural low incomes as the consequence of basic distortions in the urban labour market, namely, that minimum wage legislation and the bargaining power of organized labour compound the effect of rapid technological change in eliminating the kind of jobs through which the rural poor could enter urban industries.

These propositions all appear to express valid elements of a very complex real situation, and on essential points many writers agree. Permeating all particular issues involved, rural poverty emerges as a special case of more general phenomena: limitations in people for adjustment to rapid change and limitations in society for facilitating adjustment to change. An optimum set of anti-poverty policies must therefore aim to equip and encourage the individual to break out of the low-income, large-family, little-education, obsolete-skills cycle which perpetuates poverty in rural areas from one generation to the other; it must also ensure that social institutions facilitate rather than frustrate efforts to make successful transition into urban environment.

C. RURAL POVERTY AND AGRICULTURAL POLICIES

The actual set of policies which have been directed to improving rural incomes in North America (ever since drought and depression in the thirties made the problem a major social issue) suggests that the flexibility of policy-designers may lag behind the ability of people to accept change. While hundreds of thousands of city-bound migrants were willing to seek the answer to the farm problem in the urban economy, rural policies have continued to reflect an introverted search for on-farm solutions. An observer of the American scene writes:

> "Political and farm leaders have not helped the situation. They have usually treated the out-migration of farm people as a mentally ill child

was once treated: don't mention it, hide it, leave it alone. And leave it alone they have. Although there has been a heavy net migration from rural to urban areas for decades, almost nothing has been done to facilitate or ease the process."1/

Support to the agricultural industry has traditionally involved senior governments; their reason for concern has been as much the stake of society as a whole in cheap and abundant food production, augmented by a nationalistic interest in accelerated settlement and commercialization of agriculture, as it has been the recognition of any special disadvantages primary producers may have to face. Tradition and vested political interests have worked against the appearance of new policies based on a recognition that the welfare of farmers remaining in agriculture is a function of the willingness and ability of others to leave it, because only by relieving the pressure of excess labour supply could returns to labour increase. The programmes administered by the U.S. and Canadian governments in their attempts to raise farm income encompassed measures of some variety but carefully avoided deliberate encouragement of migration.

Research and extension services to farmers

One traditional role of government in agriculture has been the development and dissemination of new technology. The competitive nature of agriculture does not allow any one producer to capture for long the returns from innovation; hence, in the absence of government research and extension, investment funds for these services would be forthcoming only on a very limited scale, and considerable agricultural technology might not be developed today.

1/ Willard W. Cochrane, The City Man's Guide to the Farm Problem, University of Minnesota Press, Minneapolis, 1965, p. 162.

Technological changes in farming are more likely to be labour saving than labour using, so these innovations tend to reduce demand for agricultural labour; they are also likely to increase the output of farm commodities and result in price declines. If demand for the commodity affected is inelastic with respect to changes in price, farmers will be worse off than before. If demand is elastic, farmers and consumers will share the benefits of the new technology; benefits to farmers will be distributed among individual producers in proportion to their ownership of land on which the new technology can be applied. The increased returns tend to raise rents (actual or imputed) and leave returns to agricultural labour (actual or imputed) around the previous level. As the forces generated by technological change work themselves out, small producers who adopted it will find themselves not much better off; those who did not adopt it but remained in agriculture despite reduced labour needs will have suffered from the decline in unit price. The low-income group as a whole is unlikely to gain.

It appears then that government as innovator of agricultural technology acts against the interest of the small producer. While this proposition is not without truth it must be qualified in at least two respects. Small farmers as consumers (and particularly as poor consumers) have an important stake in low food prices and in the general advancement of society which hinges upon low food prices. Also, small farmers as producers -- as long as they remain producers -- have a vital interest in adopting new technology once it is developed because it protects them from further impoverishment; new technology has also freed them from backbreaking labour. To the extent that government extension services reach low-income farmers at all, they may play a positive role in helping them keep up with new agricultural techniques. These qualifications modify but do not alter the conclusion that agricultural research and extension are of primary interest to consumers and to owners of substantial land resources. The impressive outlays by the federal and provincial governments on

agricultural research and extension over the decades should not be regarded as investments on behalf of the rural poor.

Price supports and related subsidies to agriculture

In Canada, some efforts to protect primary producers against the vagaries of free competition may be traced to government support given to the various marketing boards, first organized on a voluntary basis. The Wheat Board, for example, was established in 1935; during the Second World War, it obtained exclusive rights for marketing western wheat (and eventually other grains). More recently, a few other marketing boards have also achieved permanent status with federal or provincial support. Effective marketing boards protect producers (and consumers) against short-term fluctuations and thus help to even out the income stream from the sale of certain commodities.

As government-backed monopolistic organizations, marketing boards could be used to set domestic prices higher than the prices for which the market would settle in the long run. If so, the difference would have to be paid by consumers in the form of higher prices or by taxpayers in the form of government subsidies. It appears, therefore, that a combination of marketing organizations with production quotas and subsidies offers the possibility not only of stabilizing agricultural incomes against short-term fluctuations but also of maintaining them above the level which would otherwise obtain. Since urban dwellers would have to finance the bulk of the costs in their capacity as taxpayers or consumers, this course of action would be one way to reduce the gap between rural and nonrural incomes.

This is exactly what price supports and related policies have attempted with some success in the United States. According to Paarlberg's estimates, USDA incurred a cumulative expenditure of $17,735 million on

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programmes primarily for the stabilization of farm prices and incomes over the years 1932-59.[1] In the years since 1959, annual outlays have reached and exceeded the $5-billion mark.[2]

Canadian governments have used price support and subsidy programmes sparingly and the measures administered have been more significant for their short-run stabilizing effects than for long-run income-raising effects. It must be pointed out, however, that -- particularly since the Agricultural Stabilization Act was passed in 1958 -- price support payments by the federal government have become a permanent feature in the production of many agricultural commodities. Some provincial governments have also been paying subsidies on various accounts. Some of the federal and provincial subsidies are not directly related to specified commodities but are tied instead to the use of certain agricultural inputs. Some examples are the feed grain assistance programme, under which the federal government absorbs most of the cost of shipping feed grains from the Prairies to Eastern Canada and British Columbia;[3] the lime

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1/ Don Paarlberg, American Farm Policy, A Case Study in Centralized Decision Making, John Wiley and Sons, New York, 1964, p. 359 (figures based on USDA sources).

2/ Cochrane, op. cit., p. 118.

3/ On this, see T. C. Kerr, An Economic Analysis of the Feed Freight Assistance Policy, Agricultural Economics Research Council of Canada.

assistance programme to non-Prairie agricultural producers; acreage payments to Prairie farmers for income maintenance.[1]

Subsidies among farmers tend to be distributed according to their share of production, which implies benefits in rough proportion to the scale of enterprise.[2] Subsidized or monopolistic prices in agriculture reduce the rural-urban income gap, but mostly by enriching the upper and upper-middle echelon of farmers, leaving the low-income group in a position perhaps worse than before. Not only do low-income farmers receive little of the subsidy, they may be less able to buy or rent additional land because land prices invariably rise in response to subsidies. Also, permanent agricultural price supports, like subsidies to other industries, endange the efficiency in resource allocation if used for the purpose of income

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1/ For three years, between 1958 and 1962, acreage payments averaged $40 million a year. For an account of expenditures incurred by the federal government under agricultural aid programmes, see The National Finances, An Analysis of Revenues and Expenditures of the Government of Canada, 1966-67, Canadian Tax Foundation, Toronto, 1966. For a general discussion of agricultural policies, see W. M. Drummond, W. J. Anderson, T. C. Kerr, A Review of Agricultural Policy in Canada, Agricultural Economics Research Council of Canada, 1966.

2/ By putting a ceiling on the absolute amount received by any one farmer, the result would be that large producers would not be subsidized in proportion to their production. This solution, if feasible, is more egalitarian but may introduce a tendency towards inefficiency by limiting the most profitable scale for any one grower.

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maintenance.[1] The following excerpt reflects the concern of many economists:

> "Price supports for purposes of income maintenance reduce the incentive to adjust production to market requirements; thus price supports at levels which maintain income contribute to high costs by holding resources in uses where their productivities are less than their capabilities. Therefore adopting (price support policies for income maintenance)... could impair the efficiency of Canadian agriculture, and erode its competitive position in export trade."[2]

Assistance in expanding the resource base of farming

The third important area of government assistance to farmers encompasses the very broad field of resource use. Intervention of this kind goes back to the settlement period and predates many of the policies referred to above. Sometimes direct, this type of assistance may also go to individual entrepreneurs indirectly through tax-supported investment in collective production facilities.

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[1] Price stabilization policies which counteract market fluctuations do serve the interest of society because they reduce the amount of uncertainty in decision-making and, hence, are likely to permit more rational decision-making concerning the use of resources and technology. The difficulty arises in making the distinction when long-term adjustments are endangered by cushioning the impact of short-run fluctuations.

[2] W. M. Drummond, et al., op. cit.

Direct assistance to farmers in their efforts to obtain land and capital has, usually, taken the form of grants, subsidized credit, and the free or subsidized use of publicly owned land resources. All such forms have been used at one time or another by both federal and provincial governments. The treatment here must be confined to a few examples.

Conditional grants combined with credit and other assistance have until quite recently played an important role under provincial colonization and land settlement programmes designed to extend the agricultural frontier and promote the institution of the family farm. These and federal land settlement programmes for veterans facilitated entry into farming[1] and, by the creation of small enterprises, may well have accentuated rather than reduced poverty in agriculture.

The federal government and some provinces play an important part in providing the agricultural sector with credit. The Farm Credit Corporation is the major federal agency in this field; it lends at subsidized rates (5 per cent) on portions of the loans and at a commercial rate (6 3/4 per cent) on the balances.[2] In addition, under the Farm Improvement Loans Act, the federal government guarantees loans up to $15,000 made to farmers by the commercial banks for livestock, machinery and other intermediate financing.

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[1] In most provinces the grants apply only to those with farming experience, and presumably farmers' sons have been frequent recipients. Many of these might have entered farming in any event.

[2] There are two main types of loan at the time of writing. On regular loans against land as security, the 5 per cent rate is applicable to the first $20,000 and on supervised loans against all farm assets to the first $27,500. The limit to the loans is $40,000 and $55,000 respectively.

In some provinces much more heavily subsidized loans are also available to farmers. For example: long-term farm loans in Quebec may be obtained at 2 1/2 per cent; on capital loans made to farmers in New Brunswick, by the Farm Credit Corporation, the province now pays the difference, not exceeding 3 per cent, between the rates charged by the Farm Credit Corporation and 2 1/2 per cent.

To deal with the varied effects of credit subsidies is beyond the task undertaken in this study. It is sufficient to note here that, inasmuch as credit subsidies have an income redistributive effect, the benefits elude farmers in the worst income position since they have not enough assets to qualify for the loans. The farm consolidation programmes, recently adopted by ARDA in a few provinces, imply an indirect extension of credit subsidies to groups now excluded.

Some provincial governments provide farmers with conditional grants for clearing, drainage, construction of ponds, sinking of wells, planting of shelter-belts, etc., and through these measures help improve the resources-to-labour ratio in agriculture. Grants usually cover a part of the total outlay and the farmers are expected to contribute their own share of the cost and labour. Again it depends (at least in part) on the farmers' own financial resources whether they are in a position to benefit from the assistance available.[1/]

Another means of influencing the resource base in agriculture has been to channel investment into improved use and development of land and water resources on which farmers collectively rely. The involvement of local or

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1/ Many of these provincial policies have come under ARDA sponsorship in recent years but historically they preceded ARDA.

senior authorities is usually required to make the organizational aspects of the projects manageable: government participation by itself is not always a sign of special assistance extended to agriculture. If the service is charged back to the users, then no assistance is involved; if it is financed from municipal taxes, then the transfer of incomes which may take place is a matter of purely local interest. However, by participation in the financing and/or execution of agricultural resource development projects the senior governments may, if they wish, invest more funds than the users could claim on the basis of their tax contributions and the expected government revenues alone. In other words, resource investment can be chosen as a vehicle of income transfer in favour of agricultural producers and it has been so used in Canada for a long time. The main examples in the federal field are found in PFRA and MMRA.

On the face of it, land-use adjustment and investments in land may appear to be appropriate remedies. Since low rural incomes are likely to reflect an inadequate mix between labour as a productive agent and the resources at its command, government-sponsored programmes to provide farmers with more and better resources appear to rectify a major maladjustment at the very root of rural poverty. It also seems plausible that adjustments in land use and related measures based on scientific assessments of land capabilities would advance economic rationality and are therefore a type of government intervention less likely to endanger the efficiency of resource allocation than, for example, price subsidies. Nevertheless, these contentions must be seriously challenged, partly on theoretical grounds and partly on the basis of actual accomplishments.

The federal government's pioneer land and resource-oriented programmes of rural development -- PFRA and MMRA -- were the antecedents of ARDA. These are examined in the following Chapter. Initially,

ARDA followed in the footsteps of PFRA, concentrating on projects related to land and water use. However, over the years, ARDA has assumed new dimensions, undergoing important shifts towards policies of a very different kind. These shifts will be considered in Chapter 4.

CHAPTER 3

FEDERAL ASSISTANCE IN LAND REHABILITATION: PFRA AND MMRA

A. REGULAR PROGRAMMES UNDER PFRA

The special circumstances which lie behind the Prairie Farm Rehabilitation Act (March 1935) will be familiar to most readers: the disastrous decline in farm prices experienced in all parts of Canada, strongly reinforced on the Prairies by prolonged drought.

> "In the drought areas of the Prairie Provinces the repeated crop failures wiped out not only the livelihood but also the entire working capital of resident farmers. The relief requirement therefore was not only for food, fuel, clothing and shelter... but for seed, feed, fodder, tractor fuel and supplies as well.... Successive crop failures affected an area of cropland, concentrated for the most part in (Saskatchewan), equal to one-quarter of the total improved farm acreage in Canada. The drought area during the decade comprised the farms of approximately one-half of all Saskatchewan farmers. In 1931, one-half; in 1933, 1934 and 1936, one-third; and in 1937, two-thirds of the farm population of Saskatchewan was destitute. As early as 1930, municipal and provincial financial resources proved inadequate to the relief requirements of the drought areas in Saskatchewan." 1/

1/ V. C. Fowke, "The Historical Setting", in Report of the Royal Commission on the South Saskatchewan River Project, Ottawa, 1952.

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PFRA was conceived as a programme of resource improvement, to supply a more substantial answer than relief to the widespread destitution. The "rehabilitation" in the title was in contrast to the direct relief payments of the preceding six years. The programme itself was to tackle such immediate problems as uncontrolled soil drifting and to begin the long-run process of strengthening Prairie agriculture through development of water resources. The PFRA programme has continued through the years, because its services continue to meet the needs or wishes of farmers and other rural residents. As may be seen in Table 3-1, the larger part of the cost belongs to the post-war era when the actual emergency phase had passed.

The crash programme of the drought years will not detain us here, though there is, in fact, no more impressive phase of the whole PFRA programme. We note only that soil drifting was brought under control within a very few years -- in part through seeding the abandoned land and enclosing it as pasture, in part through a vigorous programme of extension to improve cropping and cultural practices.[1/] The total expenditure on the land-use programme to 1945, including early pastures, was a bare $9 million, while the added income from the salvaged land is incalculable.

[1/] The real battle was won on the lands of farmers, through the adoption of improved techniques in soil management. It was PFRA, in conjunction with the Dominion Experimental Farms, that developed the improved methods, and the same agencies, working through the newly formed Agricultural Improvement Associations, that took them to the farmers. By the early forties, it is estimated, strip-farming was the established cropping practice on about 50 per cent of the farms in the Brown Soil Zone and on as much as 80 per cent in the driest districts. This phase of PFRA activity passed to the Dominion Experimental Farms at the end of the war.

Table 3-1

PFRA Expenditures, by Activities, 1935 to 1965

(Thousands of dollars)

	10-Year Total 1935-45	30-Year Total 1935-65
Programmes in land use		
Community pastures*	4,101	27,820
Other	5,194	5,194
Water development		
Farm projects	4,423	37,351
Community and large projects	4,531	22,087
Supervision and equipment	893	17,087
Engineering service	n. a.	26,090
Administration	766	3,779
Total	19,908	129,408
Special Votes		
St. Mary Irrigation Project	-	29,774
Bow River Irrigation Project	-	34,025
South Saskatchewan River Project	-	93,064
Other	-	14,813
Total		171,676
Grand Total	19,908	301,084
Revenue: (to 1965)		
Community pasture operations	12,024	
Irrigation project and general revenue	6,068	
	18,093	

* covers construction, operation and maintenance.

Source: PFRA Annual Reports, 1944-45 and 1964-65.

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Through these early years, PFRA was essentially a small-budget agency, even by the standards of the thirties. The cumulative total of $19.9 million which had been spent by 1945 is precisely the figure cited as the 20-year cost of relief and Prairie Farm Assistance Act (PFAA) payments in 18 municipalities in the South Saskatchewan Dam area (1930 to 1950).[1/] Since 1945, however, PFRA expenditures have risen sharply. In 20 years, 1946 to 1965, more than $100 million has gone into the regular programme, and about $170 million has been spent under special votes, chiefly for the major irrigation projects (Table 3-1). For the regular programme alone, the post-war expenditure works out to an average of $5.5 million a year, divided among three provinces. This compares with a federal commitment of $33 million under the First ARDA Agreement, or an annual average of about $13 million divided among 10 provinces.

Under the regular budget, something over $2 has been spent in Saskatchewan for every dollar in the other two provinces combined (Table 3-2). Among the major reasons are Saskatchewan's larger drought area, and the fact that its farmland area and farm population exceed those of each of the other provinces. Alberta's decision to remain outside the pasture programme has also played some part. In terms of total expenditure, Alberta's share more closely approaches Saskatchewan's but, with further expenditures to be made on the South Saskatchewan Dam, Saskatchewan's lead will increase. Manitoba remains a relatively minor participant.

1/ Report of the Royal Commission on The South Saskatchewan River Project, op. cit., p. 315. The Prairie Farm Assistance Act (PFAA) is not to be confused with PFRA.

Table 3-2

PFRA Expenditures, by Provinces, 1935 to 1963

(Thousands of dollars)

	Manitoba	Saskatchewan	Alberta	Total
Community pasture[1]	1,203	5,952	129	7,284
Water projects[2]	4,627	17,896	4,705	27,228
Other regular budget (pro-rated)	13,152	53,775	10,895	77,822
Total	18,982	77,623	15,729	112,334
Special votes[3]	5,416	61,303	58,447	130,544
Grand Total	24,398	138,926	74,176	242,878

(1) Construction cost only.

(2) Financial assistance paid.

(3) Total includes miscellaneous projects amounting to $5. 3 million which cannot be fully allocated. Roughly $3 million was in British Columbia, and a small amount in Ontario.

Note: Annual Reports for later years do not supply the provincial breakdown for community pastures. However, even in the 1963 Annual Report, data on expenditures by provinces cover only about one third of the regular budget programme. The larger portion, therefore, is merely an estimate.

Community pastures

A community pasture provides land for grazing (usually for the summer season at a set fee per animal). Many have been organized by farmers themselves as a co-operative enterprise, and government pastures have a long history in Alberta where control of land use has been a primary aim. In Manitoba and Saskatchewan, PFRA

introduced the pastures to deal with problems of the thirties: uncontrolled soil drifting on abandoned farms, and the seemingly hopeless prospect for farmers on similar soils in the same problem areas. Briefly, the pasture programme was designed to (1) provide a basic framework for reclamation (seeding) of damaged land, and for permanent control of land use (lest it revert to crops); (2) remove farmers from the worst areas; and (3) develop large areas for grazing as a source of added income for neighbouring farms.

By 1945 the programme had enclosed more than one million acres, and another 800,000 acres were added in the post-war era. While the figures tend to exaggerate the amount of the land-use adjustment (some pastures included vast areas of vacant Crown land where for years land had been used for grazing), they do reflect a large addition to productive capacity as the pastures enclosed and reclaimed abandoned farm land. Conversion of land use, where farmers sold out and cropland was put in pasture, has probably involved a net addition also, for the pastures are heavily concentrated in areas with a long history of crop failure. Even today, with better moisture and greatly improved technology, there is little land in PFRA pastures that agriculturalists would wish to see in crops. 1/

In terms of the first objective -- the treatment of problem lands -- there can be few doubts concerning the success of the pasture programme. Many thousands of acres were brought back into production as rangeland and, through developmental expenditure, low carrying capacity

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1/ The definition of "marginal land" does change over time. As a result of better methods for conserving moisture and the use of larger machines, there is some land in certain pastures that could be in crops today. By and large, however, the judgments of the thirties appear to have stood the test of time.

on former rangeland was substantially raised. (From 1938 to 1963 the cattle population on PFRA pastures in Southern Saskatchewan doubled; other PFRA pastures recorded a threefold increase. While this increase was not wholly due to the development programme, the latter may be counted a key factor.) It may also be argued that the restrictions on land use have tended to eliminate financial losses attending the attempt to farm poor land.

Unfortunately, it has not been possible to develop any useful measures of the income added by PFRA pastures over the whole 30-year period. Certainly the programme has worked to increase cattle population, but so have such factors as improved moisture conditions and higher cattle prices. To what extent may higher cattle income be attributed to the pastures? The question is especially relevant to the post-war era, when the emphasis shifted from emergency treatment of problem lands to the grazing needs of small farmers. As stated in PFRA's Annual Report for 1952, the main reason for community pastures was by then "to assist small-scale farmers to raise livestock as assurance against drought".

Figures for 1962 show 7,300 farmer-patrons in Manitoba and Saskatchewan; 5,500 to 6,500 would be more representative of the period since 1950. The average herd was approximately 18 head. Larger operators may place as many as 75 head on pastures. There are many small farmers whose participation is limited to 5 or 10 head. Rough calculations suggest that, for operators who can place upwards of 40 head on pasture (adding, say, $1,000 or more in income) PFRA pastures have made the difference between a small and a significant livestock enterprise. On the other hand, a small herd would yield net returns in the $100 to $200 range, and figures on average herd size indicate that a high percentage of patrons have been adding less than $500 to income.

We would agree, of course, that even small additions are usually welcome; certainly, the pasture programme has been a popular one with farmers. What seems doubtful, in view of the income data, is that the pastures

could play a decisive role in making small farms viable. If, in fact, the number who benefited in a significant way has been relatively small, the pasture programme has contributed but little to the problem of inadequate scale.

Neither do we find much evidence to suggest that the programme has played a major role in removing farmers from poor land. How many farmers moved out of pasture areas is not really known, but the number actually assisted in relocation was very small. In the thirties and forties, PFRA moved a total of 149 farmers to the Eastern Irrigation District in Alberta and a smaller number to irrigation projects in Southwestern Saskatchewan. The figures could be raised somewhat to cover farmers in pasture areas who sold out and relocated on their own, but the general exodus was so very much larger (e. g. , an estimated 10, 000 Saskatchewan farmers made their way from the drought areas to pioneer homesteads in the North [1]) that it seems likely that the main movement would have occurred without the pasture programme.

A later section of this study will discuss the benefits and costs attributable to community pastures built under the Saskatchewan ARDA programme, which came long after PFRA had established its network of community grazing facilities on lands most obviously suited for that purpose. According to our calculations, the ARDA pastures offer limited returns and, on the basis of modern costs, the justification for many of them appears to be in doubt. It should be borne in mind that similar calculations for PFRA pastures would have given more favourable results. Generally, PFRA pastures -- few of which involved the clearing of heavy bush -- have been built for $3 to $4 an acre whereas Saskatchewan, under the ARDA programme, is spending from $10 to $50 to provide one acre of pasture

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[1] E. E. Eisenhower, Land Utilization in Saskatchewan, cited in V. C. Fowke, "The Historical Setting", op. cit.

land.[1] For the early PFRA pastures, when blowing soil threatened permanent damage to the land, the benefits were probably large indeed.

Farm and community water projects

Under the so-called "farm programme" of water development and larger works (excluding major irrigation) serving communities or regions, more than $60 million was spent up to 1965 on thousands of structures widely distributed across the three Prairie Provinces.

The most widely used technique -- and surprisingly effective -- has been the farm dug-out, a simple excavation which impounds the surface run-off. Since the cost is low, construction is not entirely dependent on PFRA assistance; however, the programme of incentive grants and free technical services, available since the late thirties, is probably the main reason for their wide distribution.[2] They are popular with farmers not only on the arid plains but in many parts of the park belt where underground sources are poor in quality, excessive in cost, or simply unavailable. Nearly 75,000 dug-outs have been built since the programme began and several thousand are added each year.

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[1] Correctly, comparison should be based on figures which include the "opportunity cost" for land in both programmes. In fact, the figures quoted are actual expenditures which, in case of PFRA, do not include any charges for the land. Prior to 1944, PFRA obtained the land free from the provinces but it has since been paying lease fees. We believe that adding the opportunity cost of PFRA pasture lands would not reduce by very much the gap between ARDA and PFRA pasture costs.

[2] PFRA now pays up to $300 towards a farm dug-out, or approximately half the construction cost. In earlier years, of course, both costs and grants were lower.

In some districts, according to PFRA estimates, up to 60 per cent of the small water projects are for home or general farm use; in others, anywhere from 50 to 90 per cent support a major cattle enterprise.[1] Since most districts also include some small-scale irrigation works -- chiefly used in growing feed -- we may infer that a high percentage of all projects have been built by cattle owners.

Attempting some rough measures of benefit, it can be said that, even without cattle, the farmer gains through lower-cost water for household and general farm use. Total cost of the dug-out runs to $600 or $700, whereas many Saskatchewan farmers pay $1,000 to $3,000 to sink a well; some pay up to $10,000.[2] The cost of hauling water is said to run as high as that of the cheaper wells. With a good-sized herd, the investment in water is basic and the farm dug-out becomes a factor which permits expansion of cattle income. In a recent American study, we find returns well above cost for investment in stockwatering facilities in the $1,000 to $4,000 range, and a Saskatchewan study suggests that still higher levels could be borne on the basis of higher land values.[3]

Beyond the individual farm level, the scale and scope of the projects vary enormously: a community dug-out, serving several farmers, can be built for little more than a farm project; at the other extreme are the larger

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[1] Estimates made by PFRA regional officers.

[2] W. R. Merryweather, Unusual Rural Water Supplies, Saskatchewan Department of Agriculture (unpublished mimeo.), April 1965.

[3] The American study cited is Roberts and Wennergren, Economic Evaluation of Stockwater Developments, Journal of Range Management, May 1965. In the Saskatchewan example (from W. R. Merryweather, op. cit.), land values are raised by $2 an acre with the development of water on a 5,000-acre pasture.

dams, costing from $500,000 to $1 million. Control structures have been built to stop flooding on a handful of farms; others regulate the flow of streams through more than 100 miles. The larger number have been small-scale undertakings, involving grants for construction in the $4,000 range, and many of the so-called "large" projects have been well below $50,000. 1/

Important differences occur also in the major function or service provided. Since, obviously, the benefits attributable to a stockwatering dam are not likely the same as those associated with securing the village water supply or controlling flooding, estimation of benefits should proceed on a project-by-project basis. The task would be the more difficult in that PFRA has not been required to render a strict accounting of the benefits, as have similar programmes in the United States. To our knowledge, there are no quantitative estimates to cover the whole field of past investment and, while benefit-cost studies have recently been instituted, their scope is limited to a few projects currently under consideration. Therefore, the few comments offered below cannot be supported adequately by empirical data.

It is our impression that a high percentage of the community projects relate directly to the cattle industry and share the chief virtues of the farm programme, which are wide distribution and low cost. Studies previously cited which show net benefits associated with rangeland water development undoubtedly have a wide application.

1/ The initiative may come from a group of farmers, a rural municipality, a town or the provincial government. PFRA supplies all engineering services and contributes something more than 50 per cent of the cost of "community" projects. For "large" water projects PFRA pays the entire construction cost plus operating costs for the first year.

For the larger single-location reservoirs, however, the situation is rather different. The number of farm beneficiaries is necessarily limited to those close enough to water stock or to receive water by pumping and hauling; as these are geographic restrictions, they are unlikely to vary much with the cost of the structure. Thus, in terms of numbers of farmers affected, the larger projects may not greatly surpass their small and medium-sized counterparts. The following illustration is drawn from a single district in Manitoba. [1/]

	Average for 7 Small Projects	Average for 7 Large Projects
Paid on construction	$28,400	$283,600
No. of farms benefited	18	33
Livestock population on farms	663	1,600

Note that the average cost of the large projects is ten times that of the small, yet the number of farms affected and their livestock population show only modest increases. At some point, one concludes, the amount of the agricultural benefit is likely to be less than the cost of the project and, from the limited data available, the authors are inclined

[1/] Cost data have been taken from the annual PFRA Reports; estimates for farms and livestock supplied by the district officer, PFRA. It may be noted that some of the smaller projects were built in the forties and their cost would be higher today.

to place this point well below the cost of the largest structures.[1/]

If this is so, justification for the larger projects must rest in part on the value in municipal and recreational uses. In the right location, benefits of this kind may be considerable. Many Prairie towns and villages are critically short of water; for larger towns and cities, an assured water supply is an important factor in attracting service facilities and industry. On the other hand, PFRA dams are also located miles from human habitation and near tiny villages which no amount of water can render attractive as an industrial location. As for the recreational uses of certain reservoirs, it would be hard to overestimate their value in areas where no natural water bodies of any kind exist. However, larger projects have been built that have no recreational uses, because more attractive alternatives are available.

The need for broader inquiries to determine benefits is plainly indicated. In this connection, it has seemed worth noting that the benefit-cost studies initiated by the Department of Agriculture are measuring agricultural benefits only, presumably because the Prairie Farm Rehabilitation Act insists that all projects must have an agricultural justification. In practice, it would appear that

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[1/] The data consist of benefit-cost studies undertaken by the Department of Agriculture of two PFRA water projects. (Not yet released for publication, the findings are necessarily tentative.) In Case A, where stockwatering would be a minor use, the farm benefit has been calculated from reductions in the cost of hauling water plus lower travelling cost for recreation; the two items, on a project in the $60,000 range, produce a benefit-cost ratio of 1.5:1.

For projects which do include stockwatering, the amount of the farm benefit would doubtless be raised; allowance could be made for the added security in farming which stems from "standby" supplies. Even so, there are always limits to the number of farmers affected.

this restriction has not always been rigidly observed and -- in the absence of a more comprehensive viewpoint -- the use of benefit-cost studies presents the unwelcome possibility that a project with high nonfarm benefits could be passed over, while one with higher agricultural but lower over-all benefits will be built.

Irrigation in Southwestern Saskatchewan

One of the more ambitious undertakings of the early years was the series of small projects in the heart of the drought area, based on creeks and streams flowing from the Cypress Hills. Though properly considered as part of the ordinary programme of water development (so covered in Table 3-1), this particular area has been the subject of several studies; a special section has been added to take advantage of data assembled.

While the main interest has centred on the irrigated plots,[1] the latter are better viewed as one piece in a comprehensive watershed development. The storage works

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[1] The particular type of development, known as "supplementary irrigation", has little in common with full-scale irrigation farming in Alberta. These projects supply 40- to 60-acre plots, for use by farmers and ranchers in growing feed for livestock. (Limits on acreage which could be irrigated were set by limits on water supply. The largest project -- Maple Creek -- at 6,000 acres compares with 100,000 acres on the Bow River Project, described below. The total development to the present is about 40,000 acres in a dozen projects; some of these are provincially owned.) There is a close relationship with the development of community pastures in the same area, the latter to supply summer grazing needs while the plots secure the winter feed. The whole point has been to provide a firm basis for the cattle industry in an area of extremely high risk for crops.

which supply the canals serve also to control the streams (most of them formerly dry creek beds in summer) for stockwatering, and to supply water for half a dozen towns, including the City of Swift Current. Though the examination has been limited to the irrigation projects, it should be borne in mind that these cannot properly be separated from the broader attack on the problems of an arid region.

Including provincial projects and individual users, the 1961 Census shows 677 irrigating farmers in the area -- roughly one farmer in six for the districts affected.

On all the projects, development has been a long, slow process. The reasons, which will not detain us here, include problem soils, the limited technology available to early irrigators, inexperience and, perhaps most critical, the lack of capital. For example, at Val Marie, virtually the whole of the cattle population had been sold off in 1937 and early plotholders were many years in re-establishing their herds. Recent years have brought new difficulties in the form of rising costs for farm labour; to reduce the high labour content of the older irrigation techniques involves substantial outlays for land leveling.

Assisted by studies previously made and PFRA records,[1/] we have ventured to make a rough comparison of benefit and cost for a single project (Val Marie).

1/ J. K. Wiens, An Economic Study of the Val Marie Irrigation Project (M. A. Thesis, Department of Farm Management, University of Saskatchewan), 1958; G. E. Lee, J. K. Wiens and J. R. Lane, A Study of Land Use on the South Saskatchewan River Irrigation Development with Special Reference to Irrigated Forage Production (unpublished mimeo.), Canada Department of Agriculture, June 1961; An Appraisal of Irrigation Projects Owned by Canada, April 1937 to March 1951 (unpublished mimeo.) PFRA, 1952; Annual Reports, 1961-65 Community Irrigation Projects (PFRA, Swift Current Office).

Measuring benefits by hay production on the plots, and using modern yields, it can be shown that the total flow of benefits over a 30-year period would exceed historical cost by a comfortable margin. Such a comparison, however, is unduly favourable to the project in that much of the cost reflects depression standards while the calculation of benefits assumes away the considerable difficulties experienced in establishing and maintaining production over the years. Given the lower yields historically, it seems unlikely that a benefit-cost ratio in excess of unity did in fact obtain. The above calculation is nonetheless useful to show that a positive ratio could have been achieved had production problems been solved more quickly.

It must also be allowed that production on the plots is not a fully adequate measure of benefit. What escapes this measurement is the stabilizing effect on the total farm operation. This dry range country can supply grazing in almost all years but its carrying capacity varies greatly; for any given acreage of operation, therefore, the dry years bring reductions -- often drastic -- in basic herds. In the absence of the plots, farm income would be lower not merely by the value of the hay but also by the loss of cattle income attributable to forced sales. The latter, typically, involves the loss of income over several years because time is required to rebuild herds. It is chiefly for this security factor that the plots are highly valued by their operators.

For proof that the plots are valued, witness the willingness of plotholders to assume costs of up to $40 an acre under the comprehensive programme of land leveling now in progress on most, if not all, the projects.

The plots have not supplied -- as originally intended -- a major means to re-establish farmers from dried-out areas. As is now recognized, the capital requirements are fairly high, the skills are not easily acquired, and the management factor is critical; on the early projects, such as Val Marie, the settlers with the fewest resources were

most prone to failure.[1] On the other hand, for several hundred farmers and ranchers who have mastered the techniques of irrigated forage production, there is no doubt that the plots do add to income. For the Rush Lake Project, near Swift Current, where all plotholders are relatively small-scale farmers, a recent study has documented the increase in net worth through the fifties.[2] The study also shows that, while no increase occurred in the average size of farm, all the plotholders increased their herds and at about the same rate as that obtained in the municipality generally. Here the chief effect of irrigation, it is argued, is in permitting a more intensive type of operation which allows the smaller operator to follow a trend to larger herds.

B. MAJOR IRRIGATION DEVELOPMENTS

The "dry bowl" or chronic crop-failure area comprises some 15 million acres in Alberta and Saskatchewan and there is a larger area (the balance of Palliser's triangle) where the risk of crop growing is by no means absent. In terms of the larger problem, a few thousand acres under irrigation in the Val Marie area could have but limited effect and it was in search of a solution with wider impact that PFRA turned to the existing irrigation districts in Alberta -- about 500,000 acres under irrigation at that time. To extend this acreage was both an early objective and a continuing theme of the programme. As early as 1938 the investigations were launched which culminated in the St. Mary River Project; in 1943, one year after the investigating commission had endorsed the St. Mary, PFRA engineers were seeking a site for the South Saskatchewan Dam. The Bow River Project was also in the offing. That the whole of the regular PFRA programme examined to this point comprises a smaller total

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[1] Wiens, op. cit.

[2] Lee, Wiens, and Lane, op. cit.

expenditure than the subject of this section, will help to place these projects in proper perspective.

Since the case for irrigation is easily perceived, there is little need to elaborate the standard arguments. Greater stability of income (through elimination of crop failure); the higher returns anticipated in livestock production and specialty crops; new land for settlement; the stimulus to business and industry in the nonfarm sector: these are the themes in PFRA reports and a wide sample of submissions to the various investigating commissions.

It will be borne in mind that government had not previously participated in the development of irrigation for the Canadian Prairies. Thus, while Alberta's irrigation districts (a product of private company development) had not produced the desired results, observers in the late forties could diagnose the difficulty as insufficient capital. Clearly a major fault had been the attempt to combine irrigation with settlement, charging the costs of construction to beginning users. Where the land failed to yield the necessary income (there were exceptions), the farmers either abandoned the land or failed to pay for irrigation. However, once the capital costs had been written off -- as happened on the Eastern Irrigation District, Alberta's largest -- the system did appear to achieve a sound position and there was steady progress in several districts. In short, there seemed good grounds for believing that new projects -- in which capital costs were largely paid from public funds, as in the United States -- would tell a different story.

The rationale for federal government participation was thus expressed in 1942 by the Meeks Commission which examined the proposed St. Mary Dam:

> "It is recognized by irrigation authorities and has been proven by the results of completed irrigation projects that, in general, successful operation of large projects is impossible if the entire cost of construction is charged against the irrigated lands. It is also recognized

that benefits from irrigation spread widely through various services and functions for transportation, merchandizing, processing of farm products and in the manufacture of equipment and supplies utilized on the farm. These benefits accrue (1) to the farmer who lives on the land, (2) to local urban and community centres, to municipalities and the province and (3) to the country at large in increased capital wealth and the maintenance of employment and business activity."[1]

The Commission did not supply a quantitative estimate of benefits nor were there, to our knowledge, other estimates available at that time. Nevertheless, the Commission's appraisal sufficed. This definition of benefits laid the basis for the federal-provincial agreement to build the St. Mary Dam and later for other agreements to cover the Bow River and South Saskatchewan Projects.

At time of writing, both the St. Mary and the Bow River Projects are completed; on the South Saskatchewan, the dam has been built but it will be some years before the irrigation system is in operation.[2] On all three projects, the costs have been substantially higher than anticipated and the acreage brought under irrigation much smaller; comparison of costs and acreage indicates very high cost per acre. It is perhaps too early to attempt an assessment since the development of irrigation is known to be a long-term proposition, and we would not deny, on the basis of the limited data available, that benefits might exceed the

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[1] St. Mary and Milk River Water Development Committee, Report (on Further Storage and Irrigation Works Required to Utilize Fully Canada's Share of International Streams in Southern Alberta), Ottawa, 1942.

[2] A brief sketch of all three projects will be found in Appendix C.

costs in the long run. But it does seem unlikely that the returns will measure up to expectations in the foreseeable future, as the following will show.

(1) Farm benefits

Logically, the whole question of primary benefits should find an answer in the Alberta Irrigation Study, a major inquiry launched in 1963 under ARDA sponsorship; the Alberta government has stated that its future irrigation policy will be formulated on the basis of this study. Unfortunately, the two substudies now available do not encourage hopes that a full and frank assessment may be forthcoming. In the first, which covers all irrigation districts, one may reasonably question the use of gross sales to define the farm benefit. 1/ The second, which does supply an estimate for net returns, is limited to the special case of the Eastern Irrigation District where the irrigation economy is supplemented by more than a million acres of rangeland. 2/ The results can have but limited application to the smaller farms and more intensive agriculture on the St. Mary Project and the Bow River. The fact, too,

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1/ L. C. Allen and K. Elgaard, Irrigation Lands Crop Production Study, Canada Department of Agriculture, Edmonton, 1963. The selection of method was apparently ARDA's. Thus, from the introduction: "the terms of reference, drawn up by the Agricultural Rehabilitation and Development Administration, established that the 'primary benefit of irrigation lies in the value of field crops that may be produced through the use of water as compared with the level of output of dry-land agriculture in the same area'. The calculation of net returns per acre, 'while a more refined indication of the productivity of irrigated land' was considered but not recommended."

2/ W. B. Rogers and T. W. Manning, The Economic Benefits and Costs of Irrigation in the Eastern Irrigation District of Alberta, May 1966.

that the costs involved are those of a low-cost extension suggests that the whole question of the amount of benefits in high-cost irrigation projects is not being squarely faced.

Some rough impressions of farm income on the Bow River Project may be drawn from farm budget studies conducted in 1956.[1/] The budgets cover a farm of average size (224 acres) with a grain-livestock enterprise; the latter was, and is, the typical land use on the project. The results show net farm income ranging from $2,300 (roughly $10 an acre) on the best land, down to $986 ($4 an acre) on the poorest. Allowing that yields have since increased and are likely to continue to do so, allowing also that more speciality crops will be grown, one is bound to wonder just how much these income figures can be raised. "It is obvious", states a prominent Albertan, "that the land, even under irrigation, cannot return costs that total up to as high as $300 an acre."[2/]

Single-year estimates -- even if the figures were recent -- are not entirely satisfactory because they fail to show the greater stability of income over a period of years. On this point, a number of American studies are available;

1/ The studies are reported in Land Classification on the Bow River Project, Canada Department of Agriculture, April 1960. To obtain the figures used below, certain minor adjustments were made: to exclude nonfarm income, and to average returns for major land classes (the study reports on 15 separate soil-topography classifications).

2/ W. R. Hansen, Chief Forester, Eastern Rockies Conservation Board, in an address to the Saskatchewan Stock Growers Association, as reported in the Saskatoon Star-Phoenix, May 26, 1966. Mr. Hansen was chairman of the Irrigation Study Committee, whose findings are reported below.

in South Dakota, for example, it has been shown that over a 30-year period (1930-60) irrigation would reduce variability of income on an irrigated farm from 33 to 46 per cent of that on a dry-land farm.[1] Again, the situation may not be entirely comparable because the study farms included dry-land acreage, but whether the added stability would be enough to justify the enormous cost is quite another question.

In the case of the Bow River Project, there is little doubt that the average income remains quite low and that, for the relatively few farmers affected, the cost has been quite disproportionate. Federal expenditures of $31 million (the figure is probably incomplete), spread over 450 units on the federal section, supply an average investment of $70,000 per farm. In addition, of course, the farmers themselves have invested substantial amounts.

As a very rough approximation, let us say that federal expenditures as given represent the total cost; using a 6 per cent annual interest rate, an investment of $31 million would require $1.8 million annually in added production in order to justify the project. On 85,000 acres, this would mean an addition of about $20 an acre. When comparison is made with estimated returns of $4 to $10 an acre in 1958 (some part of which would have been possible without irrigation) it is evident that the level of returns that could justify the federal investment was not then in sight.

In the absence of income data for the St. Mary Project, which does include the growing of specialty crops, judgment must be reserved.

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[1] Economic Comparison of Irrigated and Dryland Farming in Central South Dakota, S. D. State University, Brookings, S. D., 1964.

(2) Agricultural settlement

Neither of the two completed projects has supplied the settlement opportunities that were a main reason for their construction. On the Bow River, a total of 162 settlers had been absorbed at full development, 132 of them from dried-out areas. Very roughly, this is the equivalent of half the farmers from a single rural municipality in Southern Saskatchewan, and the area contains more than 150 rural municipalities. Acreage data make clear that expectations were also not fulfilled in the case of the St. Mary which, in terms of 1942 hopes, was to be capable of supplying new land for 2,800 farmers.[1/]

On both projects, the period under review has also seen a trend to larger farms. Generally speaking, the quarter-section holding is now inadequate; many of them have disappeared. So it is that the total farm population on the Bow River Project is but little higher than it was at time of take-over.

Today, while it is still true that application of water will permit a given area to support more farms, irrigation is no longer viewed as a major land frontier. Planning for the South Saskatchewan is for much larger acreages than those in Alberta -- for full-scale irrigation farming, up to 300-400 irrigable acres.

(3) Nonfarm benefits

Secondary benefits have been defined as the values added to the direct benefits as a result of activities

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1/ The figure was gratifyingly close to the number of farmers in 100 townships who had received PFAA assistance in three consecutive years, and was a main argument advanced on behalf of building the St. Mary.

"stemming from or induced by" the project.[1/] The first (stemming from) covers income arising in the processing of products attributable to the project. The second and more important (induced by) is essentially the increase in business activity which results partly from the project investment and partly from increased expenditures by farmers.

While a variety of opinions could be cited concerning the treatment of secondary benefits, in large part the differences appear to stem from the purposes for which the estimates are wanted. U. S. practice in project submission has been to include an estimate, using methods which derive the secondary benefits as certain standard percentages of the primary.[2/] That the resulting values are low, accords well with the government's main objective, which is to compare the relative merits of many unlike water development projects, all of which may be assumed to have secondary benefits. Project selection, therefore, rests chiefly on the primary benefits.

[1/] S. V. Ciriacy-Wantrup, Benefit-Cost Analysis and Public Resource Development, Journal of Farm Economics, November 1955.

[2/] The main federal agencies submitting water projects are the Bureau of Reclamation, Corps of Engineers and the Department of Agriculture. The techniques used in the measurement of secondary benefits are chiefly the Bureau's and rely heavily on studies of existing irrigation projects. Official policy has been set down in Circular No. A-47, Bureau of Budget, Washington, December 31, 1952. Prior reference to Proposed Practices for Economic Analysis of River Basin Projects, Report to the Federal Inter-Agency River Basin Committee, by the Subcommittee on Benefit & Cost, Washington, D. C., May 1950.

Critics of the above procedures point out that there are the regional effects to consider, as distinct from the national. A study sponsored by the Canada Department of Agriculture submits:

> "For projects whose scope does not appreciably affect the national economy, marginal analysis is appropriate, the initiation and scope of the project being determined by the excess of benefits over costs at the margin. For large-scale projects, whose implementation will effect a more intensive development of an entire region, as is the case with many river basin projects, a structural, not a marginal change is involved, and the appropriate tools are input-output analysis and linear programming."[1/]

Since no such study has as yet been made, we can do no more than point to a few examples -- the growth of the livestock finishing industry in Alberta, the establishment of processing plants and manufacturers of irrigation equipment, the large volume of construction employment.

The latter was an important consideration for all three projects and, with less than full employment in Canada over most of the construction period, they probably did add to the total volume of employment. (This might not apply in the last few years.) No less important to the

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1/ John Boan, The Economic Significance of Water Requirements Relative to Human Activities and Needs in the Saskatchewan River Basin, Canada Department of Agriculture, Ottawa, 1961. See also J. V. Krutilla, Criteria for Evaluating Regional Development Programmes, American Economic Review, May 1955, and S. V. Ciriacy-Wantrup, Economic Analysis of Secondary Benefits in Public Water Resources Development, in Proceedings of the Irrigation Economics Conference, University of Alberta, June 10, 1964.

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provinces concerned, they increased the volume of employment within the region.[1] On this point it could be argued that, since the Prairies have seldom had high rates of unemployment since the thirties, structural unemployment is not a major problem. But the Prairies are a region subject to rapid change in farm technology, to declining opportunities for rural youth, and conditions of increasing difficulty for small farmers. It may be that the major irrigation projects have played some part in easing labour out of agriculture, thereby reducing underemployment.

A chief limitation of the secondary benefits -- though large and important to the region -- is that almost any large project will confer them. Again, therefore, we are led back to the direct benefits and it is in this area that irrigation (in the United States, where benefit-cost ratios are readily available) is frequently unimpressive. For this reason a critic of the American programmes concludes that the western states would do better to press for development projects of a different kind:

> "The West is not interested in reclamation projects per se, but rather in federal investment to promote economic development. If public funds and enthusiasm were available to develop the resources of the West on a broad front, the pressure for the restricted and somewhat backward type of resource development represented by land reclamation would be reduced. Enough other

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[1] In the Outlook district, with a pre-project population of 8,000 persons, an increase of 1,200 is attributed to direct employment on the project and half again that number is expected through the multiplier effects. More than 30 new businesses established in the area between 1958 and 1960: Saskatoon and other cities would also share in the increased volume of spending. South Saskatchewan River Development Project, Progress Report for the Period 1958 to 1960, South Saskatchewan Development Commission, Regina.

benefits would accrue so that supposed irrigation benefits need not be counted in order to get an appropriate benefit-cost ratio. Perhaps the present political support for reclamation could be diverted to support for a broader program of resource development."[1/]

(4) Conclusions

How little is known concerning the benefits of PFRA irrigation is perhaps the clearest impression emerging from this study. Rereading the briefs submitted in support of the South Saskatchewan Dam, one is struck alike by the desirability of the project in terms of regional interest -- and by the weakness of the quantitative data which support the case. The province argued, rightly, that agricultural production would increase, but failed to define the amount of the increase in farm income or to relate it to the cost of the project. At least in part, the widespread support the Dam engendered derived from false premises. As one example, the chance to arrest rural depopulation through cheap power for industrial use was the main argument advanced by the 18 municipalities in the Dam area.[2/] Most, if not all, petitioners laid heavy emphasis on the settlement opportunities on the half-million acres (whose irrigation was originally planned). It is not suggested that such gross misrepresentations originated with PFRA, but they do reveal the kind of false expectations which, in the absence of all but the most rudimentary analysis, it was possible to hold.

[1/] John A. Schnittker, Appraisal of Programmes and Impacts on Land Use Adjustments in Dynamics of Land Use -- Needed Adjustment, Iowa State University Center for Agricultural and Economic Adjustment, The Iowa University Press, 1961.

[2/] From the same source came the thought that savings in acreage payments could "almost" pay for the Dam (PFAA payments in the area had been running at about $1 million per year; total cost of the Dam was expected to be $250 million).

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Beyond the fact that benefits were seldom defined[1] and generally exaggerated in the public mind, the building of all three projects appears to have been much influenced by major concerns of that era: the probability of recurrent dry years and the continuing problem of farmers in drought-prone districts. How much the hopes and planning centred on the supposed opportunities for settlement has been clearly brought out in PFRA's account of the early history of the Bow River Project, reflecting not merely the experience in the thirties but the fact that in spite of ten years of good moisture certain districts had continued to require assistance. In these districts, PFRA could state, "climate and soil type are such that it is impossible for farmers to make a living".[2] Irrigation, so the argument continued, offered a twofold solution, in that part of the population could be resettled on the irrigation project while those who remained behind might improve their incomes by increasing acreage. This line of reasoning would be more convincing then than now because the alternative solution -- relocation to urban employment -- was not seriously considered. If land was lacking for all who wished to farm, it apparently was seen as an obligation of government to extend the land frontier. The same thing can be seen in the northern settlement projects which engaged the provincial governments, both in Alberta and Saskatchewan.

It has also been charged that the drive for irrigation served certain areas badly through its anxiety to ignore still another alternative, that of increasing farm

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[1] An exception will be found in the analysis made by Professor H. Van Vliet for the Royal Commission on the South Saskatchewan River Project; these estimates, however, were not altogether favourable.

[2] D. W. Kirk, The Bow River Irrigation Project, Part I, Canada Department of Agriculture, PFRA, Regina, 1965.

size.[1] The reference here is specifically the provincial section on the Bow. In the analysis of the committee cited, this area had made its adaptation -- through larger size and scale of farms -- and, though well able to benefit from 40-acre plots, it had little to gain from full-scale irrigation. The latter required the breaking up of large units, which were yielding adequate incomes, and launched the farmer in a wholly new enterprise of highly uncertain prospects. In its insistence on full-scale irrigation, it is argued, the province was too much influenced by the problems of the quarter-section homesteads of the twenties.

> "In our opinion the planning of projects now under way has been carried out on the assumption that there is no question that it will be to the benefit of Canada as a whole and to the area concerned in particular, to put water on every quarter section where it is physically possible. In many cases, instead of stabilizing the area, this practice will break up the large-scale units now established, and force farmers into a form of farming for which insufficient evidence is available to show that markets are available." [2]

The foregoing is not, of course, the final word: long-run net incomes may still prove that full-scale irrigation has been a good decision after all. The case is illustrative of the danger inherent in static approaches to changing problems.

We would add that this is plainly not a characteristic of planning for the South Saskatchewan. Research over many years (both by PFRA and the province) is establishing the "best income" position and the Saskatchewan farmer will confront a number of attractive alternatives. These will include both full-scale irrigation and the forage plots

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[1] The following is drawn from the Report of the Irrigation Study Committee to the Government of Alberta, Sept. 1958.

[2] Ibid.

for livestock operators so strongly favoured by the Alberta Committee in 1958.

The present study has not attempted to evaluate the South Saskatchewan Project. It is safe to state that, in spite of unrealistic objectives and exaggerated claims of 15 years ago, there will be benefits to Saskatchewan agriculture, though the larger part seems likely to accrue in the very long run. For the near future, much more important gains are expected through industrial, municipal and recreational uses. It is worth recording that, while it was not the Dam that brought the potash industry to Saskatchewan, the mines establishing in the Saskatoon area are eagerly awaiting the water. It is possible that from the standpoint of long-term requirements for industrial development the cost of the South Saskatchewan Dam may yet be justified.

C. THE REHABILITATION OF MARITIME MARSHLANDS[1/]

Saving approximately 80,000 acres of salt water marshes adjacent to the tidal rivers which empty into the Bay of Fundy was the objective of a federal programme under the Maritime Marshland Rehabilitation Act passed by Parliament in 1948. The marsh formations resulted from salt water that penetrated daily into the river systems

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1/ Historical data on the marshes and their utilization in the late forties and early fifties were drawn from Gordon Haase, Some Economic Aspects of Marshland Reclamation in the Maritime Provinces, Canada Department of Agriculture, Economics Division, Ottawa, 1954 (for restricted distribution). The authors gratefully acknowledge their indebtedness to Mr. Haase for providing his own copy, and want to emphasize that he is in no way responsible for the way in which it has been utilized here. The views concerning all aspects of the MMRA Programme are solely our own.

with the rising tide, and, over long periods of time, caused the accumulation of silt on the valley floors. If protected from further salt-water flooding, these marshes are well suited for agricultural production.

The first dykes were built more than three hundred years ago by the Acadian settlers who grew mainly cereal crops on the protected marshlands. Apparently as early as the 1820's there was a shift towards hay and fodder production, and these remained the main crops from the marshes throughout the nineteenth century. As horse-drawn vehicles were replaced by the motor car in the metropolitan areas of the Eastern United States, a secular decline in the importance of the Fundy marshlands began. After World War I the dykes were allowed to deteriorate and large areas of formerly protected lands went back to the sea. A 1946 survey of 47 miles of dykes and aboiteaux[1/] in Nova Scotia and New Brunswick found only about one mile out of four met safety standards.

Prior to the enactment of MMRA, the federal and provincial governments each offered to pay to the landowners a third of the cost of repairs on the protective structures but, apparently, the inducement was not strong enough to halt the process of deterioration. Under MMRA the federal government took responsibility for the repair and construction of all protective works; the provinces for drainage and land utilization.

During the 16 years since the inception of the programme, 123 projects have been completed. These represent the construction of 250 miles of dyke, 433 aboiteaux

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1/ Aboiteaux are tidal dams at stream crossings which allow fresh-water run-off but prevent salt-water penetration.

and 4 major tidal dams.[1/] Altogether, according to MMRA sources, over 81,000 acres had been protected at an aggregate expenditure of nearly $21 million, distributed provincially as follows:

Table 3-3

MMRA Project Summary, 1949-64

	Acreage Protected	Cost ($000)
Nova Scotia	44,054	8,817
New Brunswick	36,963	5,254
Prince Edward Island	275	20
Total	81,292	14,091
Expenditure for administration, engineering and supervision		6,647
Grand Total		20,738

The MMRA administration was located in the Department of Agriculture until 1964 when it was transferred to the Department of Forestry and integrated with the ARDA regional administration for the Atlantic Provinces in Amherst, N. S. The protection of marshlands can now be considered a task completed.

[1/] Fifteenth Annual Report of Activities under the Maritime Marshland Rehabilitation Act for the Fiscal Year Ended March 31, 1964. Maritime Marshland Rehabilitation Administration, Department of Forestry, Canada.

The major question in an economic evaluation of MMRA is: Was the programme justified in the first place? If marshland agriculture was worth saving, then it appears that MMRA fulfilled an historic mission at the right time and with technical competence. The repairs were made and the new structures were built before a complete deterioration of the old ones resulted in major damage to the marshland soils and hindered the use of heavy construction machinery. As a centralized agency responsible for the task in the entire Fundy region, MMRA was able to introduce uniform standards and to shift towards the use of large tidal dams across the rivers, replacing miles of up-river dykes which ran parallel to the banks.[1/] However, there seem to be good reasons for questioning whether the prospects of marshland agriculture could really justify the costs of saving it. Without a more thorough examination of land utilization and incomes in the area, a definitive answer is not possible but the information which is available warrants a tentative answer in the negative.

Let us first consider MMRA under the dual assumption that the programme would have to be justified in terms of net agricultural output increments alone, and that the expenditures faithfully represent social costs. Both assumptions will be relaxed later. To further simplify matters we neglect all costs to be borne by the public over and above project expenditures as shown in Table 3-3 (maintenance, depreciation, etc.) and question only whether or not a $1.2 million additional net income could be attributed

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1/ Almost 30,000 of the 81,000 protected acres are up river from the four major tidal dams constructed on the Shepody, Tantramar, Nappan and Annapolis Rivers. Once a dam is built, salt water cannot penetrate further up the river and the dyking system becomes unnecessary. Besides the advantage of requiring less maintenance, the tidal dams provide bridges and in some cases form part of major traffic arteries. For instance, the Tantramar Dam became part of the Trans-Canada Highway.

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annually to the 81,000 acres of marshland in order to match interest charges on $21 million at the arbitrarily selected 6 per cent level.

The prospects that a survey of marshland agriculture, if conducted, could uncover actual results approaching this magnitude are dim. The total net value of agricultural production in Nova Scotia and New Brunswick declined by about $5 million, or one tenth of its former total, between 1949 when MMRA was started and 1961-62 when it was just about completed. Could it be proposed, however, that MMRA may have prevented a more rapid production decline -- perhaps by shifting the emphasis from the less productive uplands to the more fertile marshlands? To the extent that indirect evidence can be relied upon, this is unlikely.

The signs were clear in the late forties that the neglect of the dykes fitted into the more general pattern of land abandonment in the Maritime Provinces. Furthermore, if land abandonment reflected the realities of costs and returns, then it was logical that cultivation of the marshes would be relinquished before relinquishing the cultivation of the upland farms. Studies conducted in 1949-50 showed that even though the soil conditions may have been more favourable on the marshes than on the same owner's upland acreage, farmers tended to use the latter much more intensively. For intensive utilization the marshes would have required liming, and installation and upkeep of drainage. Such improvements were frequently made unfeasible by the generally fragmented tenureship on the marshes, absentee owners, unapproachable small parcels of land, etc. The farmers usually resided on the upland section and tended to abandon the sometimes distant marshland parcels earlier than the home farm.

The state of marshland utilization and the general conditions of agriculture in the area is reflected by one of many surveys conducted around the time when MMRA was enacted, this particular one covering 99 farms in

Albert County, New Brunswick.[1] The average farm in the survey had 42 cultivated acres distributed roughly half and half between marsh and upland. Yet, on the basis of utilization, $33 gross output of farm products was attributable to each cultivated marshland acre against $60 per acre on the upland section; that is, a third or so of the $1,945 gross output per farm (including home consumption) was creditable to marsh. The same owners had on the average 18 acres uncultivated or unprotected marshland which, as a result of the MMRA programme, are now presumably suitable for crop production.

In the light of census data, it appears unlikely that additional marshland was brought into cultivation since that survey; information in sufficient detail is not readily available but census figures suggest the opposite to be more likely. In Albert County as a whole, MMRA projects assured protection for 8,248 acres of marsh, while total cropland was reduced from 16,000 to 11,000 acres over the 1951-61 decade.

Albert County was not untypical of other areas. In Westmorland, 28,463 acres were protected while 27,000 (from 85,000) acres of the total cropland went out of cultivation. The proportions were quite similar in Cumberland, Kings, Colchester, Annapolis and other Nova Scotia counties where large acreages of marshlands were put under permanent protection.

A recent study on marshland utilization in the Sackville area (Westmorland County) points out that "despite substantial public and private expenditures on marshland reclamation since 1946, farming in the area has continued to decline".[2] This is documented in terms of farm

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[1] Figures based on Gordon Haase, op. cit.

[2] G. C. Retson, "Marshland Farming in the Sackville Area of New Brunswick", Canadian Farm Economics, Vol. I, No. 3, August 1966.

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numbers and farm population but the data also indicate declining, or at least stable, returns. The survey conducted in 1965 revealed a net farm income of $960 for 26 relatively large farms covered; this was supplemented with a like amount of off-farm income. Unfortunately comparison with earlier surveys does not permit any general inference concerning a trend in marshland utilization because, in the Sackville area, farmers have been traditionally more dependent on the marshes than in most other areas of the Fundy Region. In 1949 a survey covering the extensive Tantramar marshes (to which the Sackville area belongs) found that 194 individuals utilized, on the average, about 50 acres of marsh. In light of this information, a 1965 survey of 26 large farms, revealing that an average of 115 acres of marshland was used, may or may not indicate a trend towards greater utilization.

Tenuous as it must be without the support of more data on local land use and income, this much can be suggested: unless the future brings major shifts in demand for marshlands against uplands and/or a general reversal of land abandonment in the Fundy Region, MMRA expenditures cannot be justified in terms of agricultural benefits, although it is possible that in specific locations this generalization would not hold.

Nonagricultural benefits must now be considered. Many of the aboiteaux completed as part of the MMRA programme serve as highways or railways and the main tidal dams double as bridges or causeways. Apart from their agricultural value, the 81,000 protected acres may also contain sections of railroad or other assets and there may be some intangible benefits of improved landscape. The existence of MMRA and the location of its engineering staff in the centre of the Maritime Provinces took technical expertise to the region and helped the provincial governments and the ARDA programme in various water and soil engineering works. It is conceivable that the nonagricultural benefits so created would justify a substantial proportion of the total cost.

The social cost of the programme is likely to be less than actual expenditures. MMRA was implemented in an area where unemployment is traditionally high and remained so during the years of construction;[1] undoubtedly, some of the labour used would have been unemployed otherwise. The employment-creating value of MMRA projects, however, does not justify inefficiencies, because other expenditures in that area could have resulted in similar employment effects. Whether or not MMRA was a worthy undertaking depends on how its benefits compare with the benefits of alternative actions.

It appears in retrospect that in face of general land abandonments and no evidence of preference for marshlands over uplands, the abandonment of at least part of the marshland agriculture might have been an alternative worth considering. The transportation benefits plus the protected acres up river were quite likely to justify the major dams MMRA built for a total direct cost of over $5 million (some of it reimbursed from the provinces). But in places where agricultural benefits alone had to match the costs, it might have been wiser to let the sea take its toll.

One alternative solution -- not necessarily the best -- could have been protection of the 30,000 acres up river from the tidal dams, for a hypothetical total cost of $7,650,000.[2] This would have reduced by roughly

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[1] Unemployment rate in the Atlantic Provinces was 5.8 per cent in 1950-54, and 8.8 per cent in 1955-59 against 3.3 per cent and 5.1 per cent respectively for Canada as a whole. H. D. Woods and Sylvia Ostry, Labour Policy and Labour Economics in Canada, Macmillan of Canada, Toronto, 1962, p. 370.

[2] This hypothetical cost is based on $255 per acre, the average cost of the programme as a whole. Taking the approximately $5 million direct costs on the major dams plus part of the MMRA administration and other indirect charges would yield a result in the same vicinity.

$13 million the programme expenditure and left 50,000 acres of marshland unprotected. Instead of protecting the latter at $255 per acre, the federal government could have offered a generous purchase price for the endangered lands and allowed their use to the present owners while the old dykes held out. In 1950 farmers valued the marshlands in their possession at $12 per acre in one marsh area, less than $20 per acre in four others and a high of $42 and $66 in two additional marshes;[1/] hence, it would have been possible to purchase these lands well above the market price for a fraction of the $255 per acre protection cost. To the average owner (with about 20 acres of marsh), a cash offer might have meant a substantial incentive to expand upland, or perhaps to finance a move to areas with better employment opportunities.

1/Gordon Haase, op. cit.

CHAPTER 4

THE FIRST THREE-AND-A-HALF YEARS OF ARDA

A. THE FIRST ARDA AGREEMENT

The first ARDA legislation (then known as the Agricultural Rehabilitation and Development Act) was passed by the House of Commons in June 1961 and its administrative machinery was established within the Department of Agriculture early the next year. Similar legislation enacted in the ten provinces permitted the signing of general agreements with the federal government for carrying out joint research and action projects. The first such projects were launched late in 1963 and the programme was in actual operation for approximately a year and a half when the agreements expired in March 1965. A new series of federal-provincial Rural Development Agreements followed which outlined the terms of ARDA activities up to 1970.

The texts of the consecutive federal-provincial Agreements[1/] provide a convenient framework for discussing the public intentions reflected in the establishment of ARDA and the type of project accommodated under it.

ARDA's purpose was summarized in the introductory paragraphs of the First Agreement, which expressed the desire of the co-signing governments

> "of facilitating the economic adjustment of rural areas and of increasing the income and employment opportunities and improving the standards of living of people in rural areas".

In addition the Agreement stated a desire of "improving the use and productivity of resources in rural areas".

1/ To our knowledge, the text of the First Agreement has not been published. Quotes below are based on a mimeographed form obtained from the federal ARDA administration.

While giving recognition to economic and social problems of pressing urgency, this preamble left public intentions vague on some major points, reflecting ambiguities in purpose not entirely resolved to this day. First, the expressed desire for facilitating "economic adjustment" left the nature of such an adjustment undefined. Second, the intention to increase the income of "people in rural areas" was expressed without qualifications as to income differences among rural residents. The concern over living standards may well have been prompted by the situation of low-income groups but it was articulated in a manner that could be interpreted to mean that rural people as such need government assistance. Third, the desire to improve the use of resources in rural areas was expressed, not as a means for furthering the social objectives, but as a second, independent objective, apparently desired for itself.

A clearer impression of intentions emerges when we turn to consider the programmes proposed. ARDA's purpose, stated the First Agreement, was "to undertake investigation and research on (rural) needs and to provide financial assistance to the provinces on projects and programmes" of the following types:

Alternative uses of land -- projects intended to promote more productive use of marginal or submarginal land for agricultural production. Among the several possibilities indicated, prominence was given to the organization and development of co-operative and community pastures. Land acquisition for pasture purposes enjoyed the highest federal cost-sharing of all ARDA action projects.[1/] Under the same sub-agreement were accommodated land acquisitions for forestry management, wildlife and recreation, and assistance to woodlot owners to encourage better management practices.

1/ The usual federal-provincial cost-sharing was 1:1, but land acquisition for pastures was eligible for federal contribution in the ratio of 2:1.

Soil and water conservation -- a variety of engineering projects and conservation measures for improving and preserving good agricultural lands. The provisions ranged from drainage and flood control to stone removal, shelter belts, terracing, etc. The Agreement offered ARDA participation in multiple-use watershed or river valley development projects to the extent that these served agricultural and rural development purposes.

Rural development. Whereas the main purpose of the first two sections appeared to be to bring under federal cost-sharing the kinds of programmes established under PFRA and MMRA, the rural development section contained significant new elements. It introduced the concept of comprehensive planning in rural development areas. The preparation of plans required the establishment of rural development officer services and the active participation of local residents. Implementation of plans was to include a broad variety of ARDA-assisted development projects not necessarily restricted to agriculture -- for example, training and re-establishment of residents.

Research. Finally, under a fourth part of the Agreement, provision was made for varied rural research projects outside rural development areas. It is interesting to note that in the original federal ARDA legislation the planned investigation and research concerning rural needs was given added emphasis by stating it prior to provisions relating to action projects eligible for cost-sharing. In addition to research sponsored by federal ARDA alone[1] and to research encouraged by the rural development section, the Agreement made further provisions for federal contributions to provincial research on land use, land capability, agricultural market prospects, and a broad range of socio-economic problems related to rural adjustment.

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[1] Socio-economic studies in most "pilot research areas" and the nation-wide Canada Land Inventory were the most important research projects financed entirely from federal funds.

The proposals contemplated were not for a series of federal programmes, as with PFRA, nor were they to follow the pattern set by MMRA, where the federal government took the lead and the provinces performed complementary functions. Under ARDA, by and large, the primary responsibility to initiate and execute fell to the provinces (except for some research). The federal-provincial agreements laid down the kind of programmes and projects that might be implemented, but within this broad spectrum (and the given size of provincial allotments) the provinces were free to choose. Since provincial plans had to be approved to become eligible for cost-sharing, the federal minister could ensure that these satisfied his interpretation of the Agreement. But this did not work the other way around: the federal partner could not elicit action deemed desirable, if a province failed to propose. How ARDA functioned, therefore, depended primarily on the provinces. These conditions are generally unchanged today.

The main functions of the federal government have been cost-sharing, policy co-ordination, technical advice and assistance with specialist services. Operational machinery has been built up over the years to widen the channels of communication with the provinces. The Ottawa-centred federal administration has established regional offices: one each in the Atlantic, Quebec, Ontario and Western Regions. Joint Advisory Committees, consisting of provincial and federal representatives, review progress reports and work out mutually acceptable criteria for ARDA policies in each province. Federal ARDA assists its generally understaffed provincial counterparts with technical experts -- water engineers, economists, geographers, sociologists, and rural development officers.

While the federal influence is felt throughout the operation, the fact remains that ARDA is essentially a collection of provincial programmes. In some cases these have been induced or accelerated; in others they appear virtually unchanged by the availability of federal funds and the persuasive power of federal officials.

Provincial allotments have been based on a formula that takes into account such factors as size of rural population and number of low-income farms (also, under the Second Agreement, the number of "poor" rural nonfarm families). 1/ In a rough way, therefore, the distribution of ARDA funds among the provinces may be said to reflect the absolute amount of rural poverty. The weakness of the formula from the standpoint of an effective anti-poverty campaign is that the relative dimensions of the problem and provincial funds available for tackling it will vary greatly from province to province. In New Brunswick, for example, the percentage of rural families classified as "poor" is almost twice as high as the percentage in Ontario (Table 2-3, above), which suggests greater difficulty in provincial financing, but the allocation of federal funds reflects only that Ontario's number of "poor" rural families is twice that of New Brunswick's and its rural population five times larger.

Table 4-1, which details the commitment of federal funds, shows approximately 70 per cent of the First Agreement total applied to Alternate Land Use, and Soil and Water Development. Research and Rural Development account for 17 per cent and 12 per cent, respectively. The figures reveal a strong provincial interest in resource programmes and could be interpreted to imply a preference for aid to the agricultural industry as such, rather than an attempt to deal

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1/ Under the Second Agreement, provincial allotments are determined as follows. Each province is allotted an initial sum ($475,000); the remainder of the $25 million annual total is distributed according to a formula which gives equal weight to (1) size of rural population, (2) number of rural nonfarm families with incomes less than $3,000 and (3) number of farms with total capital value below $25,000 and annual sales of farm products below $3,750, as recorded in the 1961 Census. Under the First Agreement, the value of agricultural production, size of rural population and number of low-income farms were used as weights (the definition of low-income farms conforming to the "hard core" concept of Table 2-4).

with rural poverty. While not inconsistent with the vague objectives stated above, the results were plainly disappointing for those whose main concern was more fundamental adjustments for rural society. Criticism was also voiced in several provinces that programme alternatives were too narrowly linked to agriculture; Newfoundland, for example, is said to have experienced difficulty in getting its early proposals approved.

Table 4-1

Commitment of Federal Funds under the ARDA Agreements

Type of Project	First Agreement (up to March 31, 1965) Thousands of dollars	Per Cent	Second Agreement (April 1, 1965 to July 31, 1966) Thousands of dollars	Per Cent
Alternate land use	12,256	35.5		
Land use and farm adjustment			6,591	23.7
Soil and water	12,300	35.7	5,969	21.5
Rural development	4,163	12.1		
Rural development staff and training services			671	2.4
Rural development areas			2,964	10.7
Special rural development areas			-	-
Other(1)			442	1.6
Federal research	3,260	9.5	8,195	29.5
Shared-cost research	2,509	7.3	2,921	10.5
Total	34,488	100.0	27,753	100.0

(1) Public information services and projects approved under more than one part of the Agreement.

Note: Costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

B. THE SECOND ARDA AGREEMENT

Important changes accompanied the period of transition from the First to the Second Agreement. ARDA's name was changed to Agricultural and Rural Development Act; its federal administration was transferred from the Department of Agriculture to the Department of Forestry and Rural Development; a $50 million Fund for Rural Economic Development (FRED) was established for the implementation of comprehensive plans in specially selected rural areas. 1/

A reorientation in ARDA emphasis is evident from the text of the Second Agreement which came into effect on April 1, 1965. 2/ It consists of the following parts:

I. Research
II. Land Use and Farm Adjustment
III. Rehabilitation
IV. Rural Development Staff and Training Services
V. Rural Development Areas
VI. Special Rural Development Areas
VII. Public Information Services
VIII. Soil and Water Conservation.

The diversity of possible ARDA activities would defy an attempt for a full treatment here; the following is intended only to highlight major changes from the First Agreement.

1/ These institutional changes were implemented over a period of time and not necessarily in the order listed. Most provincial ARDA administrations remained within departments of agriculture.

2/ Federal-Provincial Rural Development Agreement, 1965-70, Department of Forestry, Ottawa, 1965.

The Land Use and Farm Adjustment section accommodates some new approaches to the "farm problem". In addition to acquiring poor farmlands and developing them as pastures (as under Alternate Land Use in the old Agreement), ARDA is now in a position to promote basic changes in the organizational structure of farming. Under specified conditions, owners of uneconomic farms or woodlots can either offer them for sale to the government or be assisted to enlarge their holdings. ARDA may purchase such holdings, provided land costs are under $100 per acre, and regroup them into viable units for lease to other farmers wishing to enlarge, or convert them to nonfarm use. Consolidation under ARDA auspices may be further facilitated by a $50 per acre grant for basic improvements on the consolidated land; by loans for enlargement to viable or potentially viable farmers; and by financial assistance for the provision of farm planning, management services and forestry training. In conjunction with the Land Use and Farm Adjustment section, the Rehabilitation clauses may also be applied: ARDA funds may be used to fill the gaps in existing mobility and training programmes, or to provide supplementary assistance for meeting the particular needs of rural people wishing to re-establish themselves in nonfarm employment. The Rehabilitation section may be used to provide special assistance to operators 55 years of age and over who are affected by the land-consolidation programme but not qualified for training and re-establishment.

Soil and Water Conservation projects are possible as before but with a new emphasis on comprehensive developments that encompass resource management throughout an entire watershed or river valley. The relegation of resource development projects to the last part of the new Agreement is not accidental; it reflects the intention of reducing reliance on this approach.

In contrast, the text of the Agreement implies increasing preference for rural development in selected subregions. There is an important distinction between Rural Development Areas (RDA) and Special Rural Development Areas (SRDA). The former are rural areas and communities with generally low income levels and insufficient employment

opportunities where ARDA may implement a variety of minor development projects which may not qualify for federal ARDA cost-sharing elsewhere (e. g., blueberry developments, forest stand improvements, establishment of parks and recreational projects, fisheries developments, etc.). In Special Rural Development Areas the intentions are much more ambitious. SRDA development programmes involve a series of physical, economic and social studies and the preparation of comprehensive plans with the participation of local residents through rural development committees -- all culminating in a broad range of co-ordinated major programmes by federal and provincial agencies financed partly from the Fund for Rural Economic Development.

It would lead too far afield to trace all the factors which shifted ARDA from its original agricultural foundation towards an increasingly regional orientation (at least in some parts of Canada), though clearly a main factor has been the accumulating experience in rural development planning that began under the First Agreement. Also, the formative years of ARDA coincided with the launching of the "war on poverty" in the United States; the latter has shifted attention from conventional farm policies, increasingly identified with large-scale commercial agriculture, to the new-style programmes which look for their clientele in poverty-stricken rural areas. The Rural Areas Development Agency (RAD), for example, was set up "to bring the programmes of the USDA to bear on the low-production, underemployment, poverty problem in rural areas". 1/ Among its manifold activities, RAD promotes improved social services, including

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1/ Cochrane, op. cit., p. 204. Cochrane summarizes the American rural poverty programmes under a chapter title "Too Little, Too Late" and comments on RAD objectives thus: "These aims and purposes cannot be faulted. If they were achieved, poverty would disappear from rural America. The problem begins, and to date has not ended (1965), with the means for implementing the goals. The means have never come up to the goals."

schools and hospitals, and increased employment and income through stimulating investment in factories, stores and recreational facilities.

The new emphasis on low-income areas is the main result of the reinterpretation of ARDA objectives which is apparent in the Second Agreement. The desire of raising income levels and living standards for "people living in rural areas" (as it was vaguely formulated in the First Agreement) has been more precisely defined as a concern that the "income level and standards of living of many people in rural areas was unreasonably low" (underlining added). The switch from rural-people-in-general to low-income-groups-in-particular was accompanied by a broadening of the term "rural". Whereas the original federal legislation of 1961 and subsequent agreements used the words "rural" and "agricultural" interchangeably (but restricted ARDA project alternatives almost exclusively to the latter), the Second Agreement interpreted "rural" on a broader basis. Some parts of the new Agreement retained the original agricultural orientation but the added emphasis given to Rural Development Areas and Special Rural Development Areas has put more means at ARDA's disposal for reaching rural non-farm population segments. In Special Rural Development Areas, where ARDA is fortified with FRED funds, it can perform functions very similar to those of RAD in the United States.

The foregoing brief review is evidence of some significant changes in scope, diversity and orientation of the ARDA programme. Originally, it seemed that ARDA's main answer to the problems of the rural economy would be the promotion of land-use changes and assistance in land and water development -- pretty well the same remedies PFRA offered the farmers of the Prairie Provinces. Now it appears that, within certain limitations and given the required provincial initiative, ARDA could be used for a more comprehensive attack. Some change in emphasis is discernible in the figures for the initial 16 months (Table 4-1 above). It is true that resource programmes still hold

the lead, and "Land Use and Farm Adjustment" consists mainly of projects which could have been accommodated under the old "Alternate Land Use" section. Nevertheless, the figures do not include the first major rural development projects announced in September 1966, [1] and there are three or four other provinces with similar plans in preparation.

C. AN ALL-CANADA SUMMARY

This final section attempts to convey an over-all impression of the first three-and-a-half years of ARDA. The treatment, intentionally, is brief, and for that reason can do no more than summarize the several approaches under ARDA which will be found in the different provinces. For a more detailed consideration of ARDA policy at the provincial level, including some attention to particular problems and related policies and programmes, the interested reader is referred to Appendix C. At the same time, though ARDA has involved a considerable diversity of undertakings, when the totals are added for all provinces a number of common features emerge. In other words, while ARDA has not meant the same thing in all provinces, there is enough of a pattern to characterize the national programme.

Let us begin with Table 4-2 (Allotment, Commitment and Expenditure of Federal ARDA Funds) which indicates the extent to which the provinces have been willing (or able) to come forward with programme submissions and to proceed with their execution. The first two columns compare the federal funds available with the amounts committed to projects under the First Agreement. Note that altogether about two thirds of the $50 million was actually committed; Quebec,

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[1] The ten-year comprehensive rural development plans for Northeastern New Brunswick and for the Mactaquac region of New Brunswick together represent a federal commitment in the order of $80 million. This is more than the total federal commitment in Canada as a whole since the inception of ARDA.

Manitoba and Saskatchewan exhausted their allotment, while the other provinces, in varying degree, failed to make full use of available funds. Underutilization is evident throughout the Atlantic Region (except perhaps in Newfoundland where over a third of the money went for federally sponsored research), most conspicuous in Ontario, and quite considerable in Alberta and British Columbia. Moreover, the figures in column 2, modest as they are for most provinces, tend to exaggerate the financial scope of ARDA action during the First Agreement. According to information obtained from federal ARDA, accumulated expenditures were only about half the commitments by the time the Agreement expired.

No dramatic acceleration in project approval is recorded for the first year of the Second Agreement (compare columns 3 and 4). The over-all utilization of the now higher federal allotment remained close to two thirds ($16.5 million of the available $25 million), with some shifts among the provinces. Quebec and Manitoba, which had been heavy users of ARDA funds, now fell somewhat behind (perhaps in preparation for long-range plans); approvals for Nova Scotia and British Columbia substantially accelerated. The "breakthrough" in Ontario occurred only in the second year of the Second Agreement, when a major new programme (farm consolidation) almost doubled the earlier federal commitment.

Why was ARDA so slow in starting? The authors cannot claim a knowledge of all the factors involved, but at least a partial explanation can be offered. Beyond the general consideration that a new programme which involves 11 governments and requires grassroots support could not be launched without delays, trials and errors, the following have clearly played some part:

1. Uncertainty surrounded the goals. In every provincial capital, governments had first to decide what ARDA was for: to raise incomes of farmers generally? to raise incomes of poor farmers? to conserve natural resources? to improve opportunities in rural areas or to assist rural people to move out? The strong emphasis on research also contributed a delaying effect.

Table 4-2

Allotment, Commitment and Expenditure of Federal ARDA Funds, by Province

	First Agreement (2 1/2 years up to March 31, 1966)		Second Agreement (in effect since April 1, 1965)			Cumulative to July 31, 1966	
	Total Allotment	Total Commitment	Annual Allotment	First-Year Commitment	Second-Year Commitment*	Commitment	Expenditures
	(Thousands of dollars)						
Newfoundland	1,586	1,080	1,379	642	82	1,804	1,079
Prince Edward Island	1,359	335	716	500	180	1,015	450
Nova Scotia	3,243	883	1,791	2,823	384	4,090	881
New Brunswick	3,314	753	1,673	485	446	1,684	1,554
Quebec	10,440	11,859	5,666	2,834	195	14,889	10,269
Ontario	10,993	2,653	5,058	1,692	3,939	8,284	554
Manitoba	3,541	4,041	1,829	457	494	4,992	2,633
Saskatchewan	6,346	7,269	2,867	1,660	703	9,632	5,745
Alberta	5,553	2,537	2,292	1,690	933	5,160	1,294
British Columbia	3,626	2,033	1,730	3,715	500	6,249	1,111
Total	50,000	33,443	25,000	16,498	7,856	57,798	25,570
Federal projects(1)	-	1,242	-	1,928	1,470	4,640	4,640
Grand Total	-	34,685	-	18,427	9,326	62,438	30,210

* Four months to July 31, 1966.

(1) Projects not allocable to any province. Most of the federally sponsored research is included in the provincial figures.

Note: Costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

2. New programmes -- and particularly those embodying new approaches -- require extensive planning, the establishment of administrative procedures, staffing, etc., all of which takes time. Thus, provincial ability to submit projects quickly depended on there being programmes of the appropriate type already in existence: prime examples are community pastures in Saskatchewan, stream improvements in Quebec. In provinces which lacked the same interest in expanding on-going activities, or where the programmes failed to fit the ARDA framework, the ARDA commitment tended to build more slowly.

3. The cost-sharing terms made it difficult for the poorer provinces to launch new programmes because federal funds had to be matched by funds of their own. With shared-cost programmes this is a general problem for provinces with heavy obligations -- those most in need of outside help may be least able to obtain it due to the many demands on their own limited resources.

We turn now to a more detailed examination of programme content, drawing on two tables prepared by the authors to show a more detailed breakdown of activities than can be had in ARDA's published classification. 1/ Table 4-3 provides an all-Canada summary, showing the cost of projects approved to July 1966; the federal and provincial shares; and the distribution of costs through ten categories of "action" programmes and six categories of research. Similar tables for each province will be found in Appendix C. Table 4-4 below is confined to a summary review by provinces for the federal cost share only. 2/

1/ Earlier tables in this Chapter are based on the official classification, The ARDA Catalogue 1962-65 and April 1, 1965 - March 31, 1966, Department of Forestry, Ottawa.

2/ Provincial contributions shown in Table 4-3 and in Appendix C may be less reliable than the figures for the federal share. Frequently the former have been estimated, using the customary cost-sharing formulas. The estimate for local contributions is only approximate: in some cases the reference is to funds to be recouped by the province from local government or administrative bodies; in others, the item consists of a rough allowance for costs that will be incurred by individual farmers as the programme is implemented.

Table 4-3

Canada ARDA Project Summary

(To July 31, 1966)

	Committed Funds			Federal Expenditure
	Federal	Provincial	Total[1]	
	(Thousands of dollars)			
11 Farm purchase, consolidation, enlargement	5,519	5,519	11,037	10
12 Direct assistance to farmers	4,158	4,585	15,144	2,177
13 Assistance to community and co-operative enterprises	9,469	7,751	17,842	5,432
14 Water and natural resource management	15,119	15,287	36,906	6,549
15 Assistance to woodlot owners	439	439	900	132
16 Forestry projects	3,035	3,035	6,364	1,259
17 Recreation and tourism	3,030	3,132	6,381	1,296
18 Assistance to fishermen	1,198	1,198	2,396	464
19 Miscellaneous rural development projects	548	548	1,209	83
20 Rural development staff and training, information services	1,704	810	2,516	370
Action projects total	44,218	42,305	100,695	17,772
21 Subregional studies and area development plans	5,273	3,545	8,908	3,655
22 General economic and socio-psychological research not covered by 21	648	244	902	288
23 Studies on specific industries, products or services not covered by 21	912	691	1,629	260
24 Canada Land Inventory	8,145	32	8,177	2,441
25 Land resource use studies not covered by 21 and 24	587	432	1,019	309
26 Water research and engineering studies	2,654	2,913	6,414	844
Research projects total	18,220	7,857	27,048	7,798
Grand Total	62,438	50,162	127,744	25,570

(1) Includes local contributions.

Note: Costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

Table 4-4

Federal ARDA Commitments by Type of Programme and Province

(To July 31, 1966)

	Nfld.	P. E. I.	N. S.	N. B.	Que.	Ont.	Man.	Sask.	Alta.	B. C.	Federal[1]	Canada Total	Percentage Distribution
	(Thousands of dollars)												
11 Farm purchase, consolidation, enlargement	-	-	1,666	20	-	3,833	-	-	-	-	-	5,519	8.8
12 Direct assistance to farmers	255	-	383	321	1,312	675	209	162	820	20	-	4,156	6.7
13 Assistance to community and co-operative enterprises	137	194	108	101	932	590	-	6,134	1,151	122	-	9,469	15.2
14 Water and natural resource management	-	253	230	152	5,577	528	2,276	830	352	4,922	-	15,119	24.2
15 Assistance to woodlot owners	-	-	115	56	268	-	-	-	-	-	-	439	0.7
16 Forestry projects	107	35	402	68	1,527	503	48	-	347	-	-	3,035	4.9
17 Recreation and tourism	197	63	119	153	159	1,092	810	438	-	-	-	3,030	4.9
18 Assistance to fishermen	238	-	-	-	941	-	19	-	-	-	-	1,198	1.9
19 Miscellaneous rural development projects	15	31	146	101	30	68	74	45	38	-	-	540	0.8
20 Rural development staff and training, information services	83	65	114	95	81	25	294	54	365	-	529	1,704	2.7
Action projects total	1,031	641	3,284	1,067	10,825	7,312	3,729	7,663	3,072	5,064	529	44,218	70.8

Table 4-4 (cont'd.)

	Nfld.	P. E. I.	N. S.	N. B.	Que.	Ont.	Man.	Sask.	Alta.	B. C.	Federal[1]	Canada Total	Percentage Distribution
21 Subregional studies and area development plans	86	277	476	402	2,877	-	571	447	44	-	96	5,273	8.4
22 General economic and socio-psychological research not covered by 21	273	-	9	2	31	4	123	75	24	25	83	648	1.0
23 Studies on specific industries, products or services not covered by 21	177	10	102	57	98	96	138	50	44	-	141	912	1.5
24 Canada Land Inventory	197	87	184	157	851	661	135	591	581	1,026	3,675	8,145	13.0
25 Land resource use studies not covered by 21 and 24	41	-	7	-	207	28	104	69	16	-	115	587	0.9
26 Water research and engineering studies	-	-	30	-	-	182	192	736	1,378	134	2	2,654	4.3
Research projects total	773	375	806	617	4,063	972	1,263	1,969	2,087	1,185	4,111	18,220	29.2
Grand Total	1,804	1,015	4,090	1,684	14,889	8,284	4,992	9,632	5,160	6,249	4,640	62,438	100.0

(1) Projects not allocable to a province. Most of the federally sponsored research is included in the provincial figures.

Note: Costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

The strong interest in physical resource programmes is conspicuous. This may be seen, first, in the heavy commitment to "water and natural resource management" (code 14) and related research (code 26), together accounting for more than 28 per cent of the total commitment. Included here are such major commitments as the Quebec programme of stream and river improvements, Manitoba's floodways, irrigation rehabilitation in British Columbia; also, in most provinces, numerous smaller projects involving dams, drainage, flood control and the like. Next in size, at 15 per cent, follows "assistance to community and co-operative enterprises" (code 13). Under this heading are grouped projects which promote new uses for land, as in a community pasture or a blueberry project; the assistance provided lies partly in land assembly and partly in developmental expenditures centred on the land. Then there are the forestry projects (code 16) and recreation and tourism (code 17). These too purport to find "better" uses for land -- as forests of the future, as a park or a wildlife sanctuary -- but ARDA's role is more narrowly confined to land acquisition, leaving subsequent development to the province (costs beyond land acquisition may come under ARDA only in rural development areas). Together with the Canada Land Inventory and other physical surveys (codes 24 and 25) -- intended to supply the basis for rational land use -- it may be seen that well over two thirds of the federal ARDA commitment to July 1966 was for physical resource investments, land-use adjustment, and associated research.

The land-development bias is not absent from the remaining project commitments. For example: the programmes shown under "direct assistance to farmers" (code 12) are usually grants for such purposes as clearing, breaking, farm ponds, water supply, tile drainage, etc. -- improvements which enhance the value of land. Assistance to woodlot owners (code 15) comprises grants for improved management practices -- another device for increasing what the land will yield.

The category "farm purchase, consolidation and enlargement" (code 11), which accounts for approximately 9 per cent of the total commitment, is a very recent addition and almost wholly confined to Nova Scotia and Ontario. This is a new approach, intended to go much beyond any of the older programmes in promoting basic adjustments in agriculture and in extending assistance geared to the individual needs of the consolidator and seller. The question of land use appears here in a different context: the basic concern is to help create viable enterprises and to offer acceptable nonfarming alternatives.

For the rest, the ARDA programme consists of minor investments in facilities for fishermen and other small development projects of a mixed nature in Rural Development Areas.

Considering the "action" programme as a whole, the primary emphasis appears to fall on aid to the agricultural industry, with chief reliance placed on investments in physical infrastructure. The latter were strongly stressed under the First Agreement and there is no doubt that a programme of this kind was favoured in most provinces. The projects usually enjoy local popularity and provincial governments are under continuing pressure to supply them. Also evident is a marked preference for projects which affect groups of farmers or whole communities. The limited "direct assistance" projects are mainly conditional grants; thus, discretionary decisions on questions such as who needs what assistance, whose farm unit has potential, etc., are usually avoided.

Promotion of land-use adjustment is subject to two interpretations. With one emphasis, it can become a supplement to soil and water projects in which ARDA has something positive to offer: this parcel of wasteland can be converted to pasture or a blueberry patch; that worthless bush can be restored to productive forest or wildlife habitat. These things will be done with ARDA acquiring the land and (in some cases) bearing the cost of development, while local communities reap the benefits of added

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income whether from cattle, blueberries, timber, hunters or tourists. In the second interpretation, however, land-use adjustment could convey a different message: these lands are not suited for cultivation and ought to be in pasture (or forest or conservation reserve, etc.); to the farmers, who cannot earn a decent income from such land, the ARDA-supported conversion might offer the chance to get out. Clearly the latter is a controversial proposition in a country where governments have always encouraged the extension of settlement, and it is frequently opposed by local interests to whom the "marginal" farmer is a voter, a customer, and a taxpayer.

In actual practice, the first, more popular course has characterized the early years of ARDA. While there have been programmes in which the two objectives were combined -- Western pastures are the prime example -- very few of the ARDA endeavours have been aimed at removing farmers from poor land. The majority of the programme descriptions indicate the desire for a park, a forest unit, a pasture or recreational facility in a particular location -- frequently one where there was little farming in any event. In such cases, ARDA has come not to accelerate the movement of labour out of agriculture but to find alternative uses for the lands which became idle and neglected as a result of previous labour withdrawals.

While land resource development is the dominant element in the action projects, concern for rural poverty is evidenced in the location of projects. Quebec, for example, has placed a high percentage of its ARDA programme in the agricultural periphery where subsistence farming predominates, and several provinces have shown a similar concern to channel a good part of the ARDA funds to the poorest districts. In face of a reluctance to confine benefits explicitly to poor individuals, this type of geographic selectivity became essential in assuring the anti-poverty orientation for the ARDA programme as a whole.

In addition to some impetus given to rural economic and socio-psychological research and to more narrowly defined feasibility studies (codes 22 and 23), ARDA boosted substantially regional research and area development

planning (code 21). These are concentrated mainly in Quebec, Nova Scotia, New Brunswick, Prince Edward Island and Manitoba, where the problems of depressed subregions have held an important place since the earliest days of ARDA, and plans for development are either nearing completion, or have already been announced. In Saskatchewan, a series of subregional studies[1/] were not followed by programme planning; in Ontario, Alberta and British Columbia the regional approach evinced even less response.

The scope of comprehensive rural development, initiated under ARDA, is most appropriately illustrated by the plan for Northeastern New Brunswick, launched in the fall of 1966 (see Appendix C). The total cost is placed at $89 million, to be spent over a ten-year period (Table 4-5). Of this total only a small part is allotted to the traditional ARDA activities. The central feature of the plan lies in the transfer of labour and population -- from an area of poor farms and high unemployment to adjacent growth centres where mining and other industries are expected to provide substantial new employment opportunities. To this end, the plan provides for large expenditures on manpower mobility, training and educational up-grading. ARDA will share the cost of the former but much of the total will fall to other agencies.

In Quebec, though the programme of river and stream improvement weighs heavily in the ARDA expenditures to date, ARDA is also responsible for initiating that most impressive combination of research and planning: the work of the Bureau d' aménagement de l' est de Québec (BAEQ). If that plan is implemented, the problems of depressed subregions will be subjected to attack on a scale unprecedented in Canada. Comprehensive programmes for Eastern Nova Scotia, Prince Edward Island and for the Interlake region of Manitoba are also pending. The present study has not attempted to evaluate these plans individually or to predict their chances for implementation. Some of their features known at the time of writing are described in Appendix C.

1/ Conducted by the Canadian Centre for Community Studies in Census Division 16 of Saskatchewan.

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Table 4-5

Northeastern New Brunswick and Mactaquac Special Rural Areas Development Plans, 1966-76: Summary of Costs

	Northeast		Mactaquac	
	Total Cost ($000)	Federal Share %	Total Cost ($000)	Federal Share %
I. On-going programmes by other agencies				
Provincial government:				
Schools	17,200	-	1,400	-
Educational television[1] (4.9 million)				
Manpower programmes:				
Technical and vocational education	10,900	75	-	-
Vocational training allowances	7,000	95	2,000	95[2]
Adult education:				
teacher training	1,400	50	-	-
salaries, allowances	6,600	75	-	-
Pilot training project	2,500	100	-	-
Mobility grants	2,000	100	300	100
Moving assistance	400	100	100	100
CMHC				
Mortgage credit ($40 million)				
Land services and subsidies	4,000	75	2,300	75
Total	52,000		6,100	

Table 4-5 (cont'd)

II. Regular ARDA programmes				
Land acquisition and resettlement:				
Land acquisition	8,000	75	2,300	75
Supplementary mobility grants	4,400	90	700	90
Supplementary moving assistance	400	100	100	100
Special assistance to 55-65-year-olds	2,400	90	800	90
Counsellors	3,000	75	200	75
Resource use adjustments:				
Forest land management	-	-	600	75
Agriculture	100	75	200	75
Fisheries	1,700	75	-	-
Development projects:				
Parks and recreation	1,000	60	3,900	75
Historic attractions	-	-	3,700	75
Other employment-creating projects	2,000	60	-	-
Total	23,000		12,500	
III. Special programmes (FRED)				
Industrial sites development	750	50	500	75
Transportation development	8,000	60	-	-
Information and extension	600	67	600	67
Evaluation	500	67	-	-
Administration	4,400	67	1,250	67
Total	14,250		2,350	-
Total, all programmes	89,250	70[3]	20,950	73.3

(1) To be negotiated as a separate agreement.

(2) Approximate.

(3) Federal share includes a $7 million implementation grant to New Brunswick.

Note: Figures may not add to totals due to rounding.

Source: Memorandum of Agreement Made between the Government of Canada and the Government of New Brunswick, September 22, 1966, Schedule C (mimeograph).

The largest single commitment under the research heading ($8 million) is the Canada Land Inventory -- a comprehensive survey of rural land capability and use in which all provinces participated (code 24). The work draws on soil surveys conducted in the past but differs fundamentally in the development of systems for classifying land according to its capability for use in agriculture, in forestry, and in recreation and wildlife management. "The task entails bringing together all existing information on the capabilities of uses of land, filling in the gaps in the existing information and interpreting the material into suitable classification systems.... It is the object of the Canada Land Inventory to store, analyze and publish this information in forms required for land-use planning at the township, provincial, regional and national levels." 1/ The intention is to cover the agriculturally settled portions of rural Canada, and also adjoining areas which affect the income opportunities of rural residents.

Particularly in Alberta and Saskatchewan, ARDA funds have been used extensively for technical and engineering surveys aimed at improved use of existing water resources and the discovery of new ones (codes 25 and 26).

What the whole field of ARDA-sponsored research may mean for rural Canada would be exceedingly difficult to predict at the present time. The authors of this study were unable to examine all the reports issued to date and a still larger body of research has yet to be published. 2/ There can be few doubts concerning the desirability of extending knowledge on rural resources -- as in the Canada Land Inventory and other physical surveys -- or of increasing

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1/ The Canada Land Inventory, Department of Forestry Publication No. 1088, Ottawa, January 1965.

2/ A 38-page document (List of Reports Submitted under ARDA Research and Action Projects, August 15, 1966) is available from the Department of Forestry.

knowledge and understanding of the rural income problem. The Eastern Canada Farm Survey[1/] made an important contribution to the latter and there have been others of some significance. But in view of the large gaps revealed in the attempt to state the amount and location of rural poverty (Chapter 2), one could wish that much greater efforts had been made in this direction.

More substantial research investments would also be required for the development of quantitative measurements of benefits and costs with respect to all activities possible under ARDA and associated programmes. Some attention was given to irrigation community pastures, blueberry projects and recreational uses of land; several studies are not yet available to assist in evaluating the results. In certain instances, the present writers have reservations concerning the methods employed and find that the ARDA studies encountered reach more favourable conclusions than our own.

A criticism with which we would agree concerns ARDA's failure to make readily available much of the completed research. A small number of published reports have been given general circulation; however, much of the larger number of completed research reports remain unpublished. Many of the titles which were thought to offer valuable assistance for the present study proved unavailable.

1/ Hedlin-Menzies, The Report of the Eastern Canada Farm Survey, Ottawa, 1963.

CHAPTER 5

THE ECONOMIC RATIONALE OF ARDA APPROACHES

In contrast to the underutilization of funds that characterized the initial experience under the ARDA programme, federal expenditures are likely to reach the $25 million annual allotment during the remaining three-and-one-half years of the current federal-provincial Rural Development Agreement. Approval of comprehensive rural development programmes now under consideration for several provinces could easily double or triple this amount from other sources.[1/] Even such an enlarged financial basis would be modest in light of the complexity and the dimension of the task ARDA is expected to accomplish. If the regular federal allotment for ARDA were to be invested on behalf of the half million poor rural families alone (as their number was estimated in Table 2-3), the amount per family would come to $50; and tripling the funds, to only $150 annually. Yet, if wisely invested, the ARDA funds could make an important contribution to economic growth and to the reduction of income disparities which now affect rural population groups.

1/ It is shown in Table 4-5 that the Northeastern New Brunswick and Mactaquac comprehensive development programmes -- the first ones approved in Canada -- represent a $78 million federal commitment for a 10-year period. Only $4.2 million of this is covered by "regular" ARDA funds; $41 million will come from the Fund for Rural Economic Development (FRED) and the remaining $32 million from other sources -- mainly as manpower mobility grants and training allowances. If, in the other provinces where special rural area plans are under preparation, similar commitments will be incurred, then ARDA and associated programmes could cost the federal treasury $50-$75 million annually. In comparison, all conditional grants from the federal to provincial governments in Canada were predicted to exceed $1 billion in fiscal 1967. See the Canadian Tax Foundation, The National Finances, 1966-67, Toronto 1966.

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The reasons for proposing a 1:1 benefit-cost ratio as the minimum criterion for judging the economic efficiency of ARDA investments have been given in the Introduction. There it was also noted how difficult it is to obtain reliable data on actual benefits.

A. LAND AND WATER RESOURCE DEVELOPMENT

To facilitate the discussion of factors which bear upon benefit-cost relationships in ARDA resource projects, we shall consider why -- in the absence of ARDA -- the development in question has not been or would not be undertaken. Plausible explanations are stated in subtitles and discussed in the text which follows. The arguments pro and con are ones that are frequently encountered; nevertheless (quotation marks notwithstanding), the format is only a convenient analytical device.

(a) "Cost would be excessive without ARDA assistance"

In each case when development projects come under ARDA financing, the primary producers who will benefit are relieved of the burden of paying the full cost. Their share may vary from zero to a relatively large proportion of costs, depending on the type of project and on provincial practices.[1/] It is not difficult to see that demand for such services will exist as long as the expected financial benefits cover the local portion of the costs. If ARDA on behalf of the senior governments pays two thirds of the costs for major drainage installations, then the local farmers will benefit as long as they recover the remaining one third. Similarly, if community-pasture patrons are charged fees that cover only part of the pasture costs, it is in their interest to use the pasture as long as added income exceeds the fee, not necessarily the total cost.

[1/] The producers' share may be paid in the form of local taxes (some drainage projects), fees (pastures), own labour (blueberry projects), commercial charges less ARDA grant (clearing assistance).

For the time being it is assumed that the benefits to be derived from the project are fully represented by the discounted value of the future outputs that producers can expect to realize in the market as a result of it; that is, no benefits are acknowledged over and above the commercial yield. Whatever social purpose is served by the project is then represented on the cost side in the form of the income transfer implied by ARDA financing. If benefits are designated as B, the producers' share of the cost (including customary returns to all inputs they provide) as C_1 and the ARDA contribution as C_2, it is possible to have a whole range of projects in which B is larger than C_1 but smaller than $C_1 + C_2$: that is, projects with over-all benefit-cost ratios of less than unity. To illustrate the case, take ARDA's assistance for land clearing, which usually takes the form of a grant for each acre cleared with hired heavy machinery. Farmers taking advantage of the grant may receive net returns in excess of total cost (B greater than $C_1 + C_2$) but if farmers act rationally, all will clear who expect benefits to equal at least their own cost ($B=C_1$). Thus, from the viewpoint of the farmer, certain projects that do not pass society's test of minimum efficiency do appear desirable because they satisfy his own minimum criterion.

Generally it can indeed be expected that the farmers' share of the cost puts a floor, below which benefits to society as a whole should not fall. In some situations, however, society may take an unusual amount of risk in realizing any benefits. Take, for example, the case of a farmer who participates in a drainage project. To recoup his one-third share of the cost through more production, it may be necessary for him to invest further in tile drainage and convert to a generally more intensive operation. This he may not be prepared to do. Yet, he may still want to participate in the project because the expected increase in the value of his land (which will be adjacent to the main ditches) will compensate him for his one-third share of the cost. In this example, it is very uncertain whether, and when, any benefits will accrue to society in the form of increased production.

The example points up an important circumstance. As one thinks about various ARDA projects, it is striking

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to realize that almost all are "first steps" in a chain of investment decisions, taken on the assumption that others will follow, and producing benefits only if these other steps do indeed follow. But that depends most frequently on the financial means and ambitions of the beneficiaries themselves. If they are poor (as one might expect ARDA beneficiaries to be), they could very well lack one or both of these. In fact, the second and third steps, which would assure that the cleared land, the improved river channel, and the drainage ditches are transformed into more hay, more beef, more bread, are frequently not undertaken.

It is often claimed as a merit of ARDA projects that, by absorbing part of the cost, they make it possible for the farmer to obtain customary returns on his own outlays when market conditions would not allow remunerative land investment otherwise. This argument is based on the philosophy of rural fundamentalism -- the alleged merit of maintaining the small producer on the land in spite of economics. ARDA could not simultaneously subscribe to this view and claim "efficiency" because the condoning of waste is implied. If the benefits are only large enough to assure customary returns to the farmer, they will tend to equal C_1 but not the joint cost $C_1 + C_2$.

ARDA assistance, justified on the basis of making expansion "pay for the farmer", is not conducive to projects that satisfy the 1:1 benefit-cost ratio as a minimum criterion unless a case can be made that (1) what appears as "cost" in either C_1 or C_2 is not a real cost to society -- a possibility to be discussed below; or (2) the benefits are undervalued if commercial outputs alone are included. Concerning (2), multiplier effects leading to the absorption of otherwise unemployed resources, recreational or scenic contributions of the project, or external economies could compensate the taxpayer, at least in part, for C_2. A reasonable case for

the existence of such effects ought to be proven in a benefit-cost analysis.[1/]

(b) "Benefits too widely dispersed -- private initiative could not be expected"

The tables describing ARDA commitments in Chapter 4 indicate that a substantial proportion of the funds is intended to provide productive overhead facilities and services. Dams, flood control, etc., are the most frequent textbook examples of benefits which are so widely dispersed that, in the absence of public action, economically sound investment opportunities could remain unexploited. While this argument has a certain applicability in the ARDA context, it must be borne in mind that ARDA projects are generally small-scale and serve a well-defined group of primary producers. It is true that a river channel improvement that prevents flooding on a few acres each for, say, 100 farmers is likely to need a government agency to plan and take action, but the nature of the benefits does not exclude a financially self-supporting execution. If the protection of exposed lands is likely to yield benefits above cost, it would be in the interest of area farmers to demand the service even if they had to pay for it fully in land taxes or in some other form.

In many cases, however, and particularly in Quebec where river improvements constitute a major ARDA expenditure, local contribution is low or non-existent. This is perhaps understandable in the light of the expressed scepticism

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[1/] An interesting case presents itself if reduced food prices are attributable to the project. Assume that $B=C_1$, that is, direct benefits are large enough to cover producer costs only; an equivalent to part of C_2, however, will accrue to consumers of food (economic analysis will show that price subsidies will not go to consumers in full) -- then, we are dealing with dual redistributive effects: (1) to consumer from taxpayer, and (2) to ARDA client from all other competing producers of food who suffer uncompensated losses as a result of reduced price.

of some ARDA officials concerning the agricultural importance of many of these projects; if the creation of employment opportunities is the major justification, local farmers could hardly be expected to bear the costs.

It makes little difference to the rationale of ARDA intervention whether producers are assisted through land and water developments collectively or by individual grants. As long as all benefits accrue to a definable group of producers, the same considerations apply as to the general case of assistance to producers discussed under (a) above. There will be a tendency to have net gains equal to local contribution but not to total cost, and benefit-cost ratios will be under unity unless nonfarm benefits exist in addition to (or instead of) the agricultural production increase expected.

(c) "ARDA intervention introduces economies of scale"

The economies of scale made possible by senior government intervention may reduce the costs (or increase the benefits) of some development projects which would otherwise not satisfy the criterion for economic efficiency. It could be, for example, that the scale of enterprise in developing and operating a large community pasture allows expansion in livestock population economically, whereas each farmer looking after his own grazing facilities might not expand. Scale could be a critical factor in reaching the optimum solution in water projects: e.g., if left to local governments, improvements to a river would take place in piecemeal fashion, so that the adjacent lands would be protected at a relatively high cost; with senior government participation, a more permanent and ultimately cheaper solution can be reached.

From discussions with persons knowledgeable about change in the organization of Canadian agriculture, one gains the impression that economies of scale are all too frequently assumed automatically. The availability of ARDA funds may make practical larger investments that are economically sound; yet in some cases publicly supported "bigness" may not successfully stand the test of critical scrutiny. For example, the scale once thought to be required

for efficient community-pasture operation has been challenged in recent studies; it is also claimed by some that private grazing may be just as economical.

(d) "In the absence of government intervention, rural resources would be depleted"

A conservationist may argue thus: larger society, whose interests ARDA represents, attaches more value to benefits in the distant future than present landowners do. Without special inducements, desirable conservation practices would not be adopted.

Economic theorists, however, do not generally accept the existence of an inherent bias in the market economy against conservation: future commercial benefits will tend to be reflected in today's price for land and govern investment decisions accordingly. In a commercially developed setting, landowners should, in their own best interest, apply an optimum amount of conservation measures.

A case for using money incentives to induce conservation measures on private lands can be argued if the spreading of knowledge is thus accelerated and is in society's interest; such a case is made for extension activities. An even clearer case for senior government intervention can be made if (a) the conservation measures affect public lands and water, and (b) the conservation measures affect private lands but society's noncommercial benefits are also involved. If conservation projects have at least a 1:1 benefit-cost ratio (counting noncommercial benefits too), then there is no question that government funds are well spent in carrying out such projects. However, it is worth considering that, if ARDA has the responsibility for rural conservation, the funds available for projects more directly affecting the welfare of disadvantaged groups will be reduced. Another qualification is that the promotion of rural development projects involving water and soil resources is not always "conservationist". It is not altogether impossible that in some localities the pressure for agricultural expansion and for tourist revenues will tend to make ARDA an instrument of infringement upon the natural beauties and wildlife of the area.

(e) "ARDA projects create employment -- a merit no private developer would consider"

A basic tenet in benefit-cost analysis is that the costs of all inputs used should be taken as benefits forgone in alternative employment. Under full-employment conditions, market prices by and large reflect these real costs to society. However, if resources were unemployed in the absence of the project, then they are in fact costless (or near costless) even though market price would not fall to zero. For the purpose of investment decisions, government, acting on behalf of all citizens, should give a shadow price of zero[1/] to wages paid to otherwise unemployed labour, whereas a private entrepreneur must count actual wages to be paid when contemplating the economic feasibility of a development.

It is interesting to note that in the ARDA project analyses which came to our attention, "free" labour of this kind is never assumed for the construction phase, thus biasing downward the resulting benefit-cost ratios. Yet the labour of farmer-beneficiaries is almost automatically assumed to be "free" in the project descriptions which serve as benefit-cost evaluations. This is implied when the farmer's cost (our C_1) is taken as cash expenses and -- in some analyses -- return to capital but exclusive of return to labour. The practice reflects an outlook well rooted in the pre-ARDA literature dealing with benefits of PFRA, MMRA and similar projects.

If the farmer does not forgo alternative employment in order to realize project benefits, then society is not sacrificing alternative benefits by "employing" him for this work, and hence the implied zero cost assumption is correct.

1/ There are many reasons why economists advise caution in the use of "zero wages". See W. R. D. Sewell, John Davies, A. D. Scott and D. W. Ross, Guide to Benefit-Cost Analysis, Resources for Tomorrow Conference, Ottawa, Queen's Printer, 1965.

However, a frequent oversight is that the discounting period over which the project benefits are spread may be as long as 20-30 years. The calculations implying zero cost for the farmer's labour will stand up only if no alternative employment is forgone throughout this entire period. For this reason alone, the unqualified assumption that the project beneficiaries' labour is always costless to society appears exaggerated.

There are further reasons for dissatisfaction with these practices. To simplify the argument, let us accept that any labour the farmer performs to realize project benefits is indeed "free" to society if he will perform it. But the latter stipulation is all-important. From the benefits, the farmer must recover first of all his cash expenses and return to capital, and second some additional amount as a return to his labour. How much the remainder must be to assure the farmer's interest in the project depends on the valuation of his own time versus leisure (alternative employment was earlier excluded).

It may be useful to consider explicitly an "incentive wage", that is, the minimum hourly rate for which the beneficiary is willing to perform the work needed for realizing the benefits made possible by the ARDA project. Unless B equals C_1, including such an "incentive wage", the farmer will not work; hence, there will be no B created, and in the absence of B there will be nothing to show against C_2, the ARDA investment. A prudent procedure would be to check all benefit-cost ratios in which the beneficiaries' labour was entered at zero cost to see how large, if any, benefits would still remain with "incentive wages" included in the costs.

Generally, the more cautious valuation of the beneficiaries' labour costs during a long discounting period, coupled with a bolder use of the zero-wage assumption concerning some labour costs during construction, would make many ARDA resource development projects appear desirable for the right reason: their short-run employment effects rather than their long-run income effects. The dispersed nature and small scale of ARDA resource projects makes it unlikely that the programme as a whole could be credited with substantial labour-absorptive contributions;

yet the same factors make ARDA projects suitable for reducing unemployment temporarily in outlying areas that are difficult to reach by other means. Undoubtedly, as a result of river improvement and similar projects, temporary reductions in unemployment may be claimed. However, even if some labour can be rightfully entered as zero on the cost side, this by itself does not assure that the associated benefit-cost ratios would then be above unity.

(f) "Ignorance and lack of credit may prevent good development projects in the absence of ARDA"

A further reason why developments likely to yield returns above costs might be bypassed without the ARDA programme is that prospective beneficiaries are unaware of existing opportunities or unable to secure financing. Efficient allocation of resources by the market succeeds only if the owners of productive resources know of alternative opportunities and exhibit a maximizing behaviour which leads to an optimum solution. It seems reasonable to anticipate that in low-income rural areas with weak commercial traditions there is a lack of pecuniary thinking and experience which would lead to a rigorous search for and exploitation of investment opportunities that may exist.

As a general argument, this proposition is important, but perhaps least applicable to the agricultural land development projects encompassed under the ARDA Agreement. Ignorance concerning alternative opportunities for employment in urban areas is a serious factor hindering the efficiency of resource allocation on the rural periphery, but expansionary opportunities in farming itself are as likely to be non-existent as not known. Furthermore, poor farmers who "lack ambition" and follow "backward" practices may exhibit the most rational attitude if their over-all situation is considered, whereas those who -- in their eagerness -- adopt the expansionary attitudes of larger commercial farmers may accentuate their financial distress. The poverty of a small producer may be as much the result of opportunities overestimated as of opportunities unemploited. For a tendency to indulge in the former, government-promoted development programmes frequently share the blame.

It could be the case, however, that remunerative investment opportunities remain unexploited, and these may happen to be developments eligible for ARDA financing. It is possible that poor farmers do not install drainage, do not clear land, do not manage their woodlot properly, because they are ignorant of benefits forgone. Even more likely, they cannot do all these things because they lack access to sources of capital. Generally, the "lack of credit" for small farmers is a reflection of the limited opportunities they have for remunerative investment. But even if their chances for success happen to be reasonably good, they might still remain without credit in a society that is prepared to extend subsidized credit to a farmer with assets, but not willing to accept the managerial ability of a poor farmer as security.

To the extent that government extension and credit services could raise a low-income farmer's earning potential at lesser cost than expected benefits, and are not available to him, ARDA could sponsor on behalf of such clients projects of economic merit. This ARDA proposes to do under the consolidation programme, to be analyzed in a later section of this Chapter.

In summary

Propositions (b) to (f) list a number of conditions in which ARDA financing might be justified on economic grounds, though in each case the conditions are a good deal more restrictive than is commonly assumed. To the question of why land and water developments fail to occur in the absence of ARDA support, the most general answer still remains the one given under (a) -- "they cost too much". And if costs are prohibitive for the farmers, much more discriminating benefit-cost analysis practices should be applied to prove that they are not too high for society at large, because a general social interest in expansion tied to agricultural land resources is by no means to be taken for granted.

As an agricultural investor, the government ought to consider market conditions with the same scrupulous care that a wise private investor would, because the producers on whose behalf it chooses to act will have to face these

market conditions eventually. The low income elasticity of most food products, the disadvantages vis-à-vis more efficient producers and areas, and the generally low returns to capital and labour in agriculture, will not fail to make themselves felt when it comes to realizing the benefits from an ARDA project; neither should they be ignored when the projects are planned and approved.

There are many reasons for doubting that any large number of ARDA resource projects could satisfy the minimum requirement for economic efficiency; there are even more doubts concerning their efficiency as vehicles of income transfer in favour of the needy. Provincial departments implementing ARDA programmes are generally disinclined to confine the projects so that they benefit only low-income groups; among other considerations, such restrictions could further reduce whatever chances the project has for economic success. It is not only a question of who is allowed to benefit. A certain level of initial wealth is often a precondition for being able to benefit. One must own the land worth draining, have the livestock to put on the pasture, afford the local share of clearing, etc. Most ARDA resource programmes are destined to serve the middle echelon of farmers and elude the ones further below, a problem by no means solved by the growing tendency to direct the ARDA programme into areas with more concentrated poverty.

We shall not attempt the same detailed consideration of ARDA resource projects in forestry and woodlot management; it is evident that many of the factors that work against the attainment of economic efficiency in agricultural projects will again apply. In addition, there is the difficulty of the longer time span before benefits accrue. For example, incentives to woodlot owners to encourage better management practices may eventually secure higher returns to the owner through increased production -- but this will hardly make it easier to eke out a living from the small holdings for the next 20 or 30 years. In this case, benefits are so far in the future that present values will tend to be small and may, in fact, be socially undesirable if the owners are encouraged to stay where they are in order to realize returns to investment.

Finally, there are the recreational and tourist projects; developments of this kind do differ in several respects.

1. The justification for government intervention is more clear-cut when noncommercial (or, more accurately, not directly commercial) benefits, such as camp grounds, preservation of wildlife and scenery, are to be created.

2. Tourism as an industry is not suffering from the limitations that hinder economic expansion of agriculture. Recreation is a growing item in family expenditures. Projects are likely to have considerable regional multiplier effects. Good facilities are also in the interest of the larger society obtaining their use, in part, as a public service.

3. Areas that have limited potential for agriculture may have comparative advantages for tourism.

These advantages should indeed be exploited with the help of ARDA funds if the low-income families of the area will derive a substantial part of the benefits. There are some limitations to consider: the poor will likely gain from the employment opportunities created, but the latter may accentuate rather than eliminate the serious seasonal employment fluctuations to which low-income rural areas are subject. It should also be recognized that the employment potential of ARDA recreation projects is frequently quite small and their popularity with local commercial interests may unduly exaggerate the gains that low-income rural residents could realistically expect.

To conclude the examination of resource programmes, we turn now to a more specific analysis of a single ARDA

programme -- the community pastures. The selection reflects, first of all, the availability of data in other studies.[1/] In addition, the pastures represent a sizeable financial commitment: more than 10 per cent of the total to July 1966. The percentage cited is heavily weighted by the very enthusiastic reception in Saskatchewan, but it is noteworthy that only one province, Manitoba, failed to give the pastures a try.

B. COMMUNITY PASTURES

The early endorsement of the community-pasture programme by ARDA cannot be explained entirely on rational grounds; also discernible is an element of ARDA's basic tenet that rural poverty is significantly related to under-utilization and misuse of land. Support for the pastures was doubtless much influenced by PFRA experience in the thirties when many thousand acres of abandoned land were brought back into productive use as community grazing facilities. The pastures were supported as a use for wasteland in parts of Eastern Canada where abandoned farms are numerous, and more generally as a possible "better" use of land in areas of marginal agriculture.

In practice, community pastures proved to have but limited appeal to provincial governments in Eastern Canada; the reasons are not altogether clear, but an Ontario study suggests some scepticism concerning the amount of benefits

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[1/] Particularly useful were two Saskatchewan studies: J. A. Brown, Community Pasture Development in Saskatchewan, Saskatchewan Department of Agriculture, Preliminary Report, 1962; and G. Storey, Benefit Cost Analysis of the Fielding Community Pasture Extension, Saskatchewan Department of Agriculture, unpublished, mimeo., March 1966. It should be borne in mind that this study has not been published at time of writing. For the opportunity to examine preliminary findings and for much time and assistance supplied, the authors wish to express their gratitude to Mr. Storey and Mr. Brown. They are in no way responsible for our interpretation of the material provided.

available.[1] It is quite possible that such factors as higher land costs in Ontario and better alternatives both for land and labour render a Prairie institution unsuitable for transplanting; nevertheless, the amount and nature of pasture benefits under Prairie conditions also deserve closer scrutiny.

Some of the ARDA project analyses attempted to determine the net benefits from the joint enterprise of pasture and its patrons' winter operation; one that the present writers used as a reference yields a benefit-cost ratio of 1.66:1, reflecting, seemingly, a fairly favourable return on investment. The study incorporates extensive inquiries concerning production and price relationships, and considerable care is exercised in the selection of variables. Nevertheless, by using the same data with some additional information from other sources and the principles elucidated elsewhere in the present study, it can be shown that the project's economic viability hinges on some very precarious assumptions.

First of all, while the 1.66:1 ratio implies benefits well above costs, the amount of net benefit represents roughly $1/hour imputed wage rate to the farmers' winter labour (which has been taken at zero on the cost side).[2] As pointed out in the previous section, the implied assumption of no alternative employment over the 30 years might be unwarranted; moreover, to assume that the farmer will be willing to work over this same period for returns less than the current minimum wage implies a certain pessimism concerning the prospects for raising rural incomes.

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[1] An Evaluation of Economic Aspects of Community Pastures and Private Land Purchase in Selected Areas of Bruce, Grey and Leeds Counties, Ontario Agricultural College, August 1964. For the particular areas examined, the study showed that an investment in pasture would yield a lower rate of return than the same land used to produce crops in rotation.

[2] The amount of winter labour necessary was estimated on the basis of the earlier Brown study, (op. cit.).

To determine whether the project can, in fact, assure net benefits that induce participation over the discounting period on the terms anticipated, it would be a prudent procedure to impute an "incentive wage" rate. If this rate is no more than $1/hour and the 1.66:1 benefit-cost ratio is otherwise correct, then the particular pasture in question satisfies the minimum criterion because a 1.04:1 adjusted ratio remains. However, two other pasture projects with benefit-cost ratios shown as 1.52:1 and 1.42:1 would both fall below unity with a $1/hour rate. The latter two projects are economic only if the farmers' "incentive wage" is less than $1/hour.

It may further be noted that the ratios cited were calculated for pasture extensions (which appear to be less costly than new pastures) and are based on certain premises that favour the project: a five per cent interest rate, full-capacity operations and all animals on the pasture as net additions to patrons' herds. There are some doubts also concerning the type of cattle enterprises these pastures were assumed to accommodate;[1/] with a slightly greater weight to the cow-calf enterprise, which is widely practised, the original 1.66:1 ratio would be reduced to 1.2:1 without any other correction. A probabilistic approach would review these several factors and give some weight to less-desired but possible outcomes. The prices used in the study, however, may turn out to be overly cautious because they were strongly influenced by the generally low beef prices during the fifties and early sixties.

The pasture fees and other pasture revenue are said to cover local operating costs, while ARDA absorbs land costs and development charges in addition to overhead administration provided by provincial governments. Looking at it from the viewpoint of the farmer, it appears that after the fees are paid and winter operating expenses

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[1/] The process of deriving net returns was based on four different types of cattle enterprise and a simple average used to represent their returns, which vary greatly.

are subtracted, there remains a five per cent return to capital and a return to own labour of approximately $1/hour in the most favourable case cited (less in others). This implies that all the farmer realizes is a meagre return on capital and labour, while the pasture as an entity does not recover the ARDA investment for land purchase and development. The latter should be taken as the taxpayer's subsidy which makes possible the above return to patrons.

Consequently, the factors that determine the efficiency of the pasture operation as a vehicle for income transfer are: (1) the benefit-cost ratio based on unadjusted calculations (but only for projects which could satisfy the minimum criterion of efficiency at "incentive wages"; others should not be implemented), and (2) the proportion of farmer patrons whose wealth position really justifies the receipt of public subsidy. While "need for grazing land" as one criterion for admittance would, presumably, place limits on the participation of medium- and high-income farmers, the latter are often a main source of the demand for the service and could not be excluded from consideration without a drastic revision in the rationale for pastures.

The admittance policies of PFRA and provincial pastures reflect a desire to assist patrons to expand herds to a worthwhile size, while assuring equity of treatment to all seekers. The two objectives cannot always be reconciled and, as a result, the pastures tend to have too many patrons to effect significant improvements for the average user. On the basis of the average return shown by the ARDA studies ($13.60 per animal unit after fees are paid), the farmer who moves from a 10- to a 20-cow herd might experience an income addition of about $230. The gain of the small operator may be even less because of a smaller-than-average herd size and possibly lower unit returns associated with less efficient management and less profitable specialization; the cow-calf enterprise, for example, yields not $13.60 but about $5 per animal unit. In this case, supposing that ARDA bears a cost of about $10 per animal unit, the farmer will be realizing less than the full amount of the subsidy, while some

"better" farmers will get much more. It is also reasonable to expect greater economies of scale in the winter operation of the latter.

To the extent that benefits accrue to affluent farmers, the cost to the public represents an income transfer to already prosperous persons. Thus, it is reasonable to believe that pasture investments will be inefficient as vehicles for income transfer.

A strong motivation in Saskatchewan's pasture programme appears to be the provincial ambition for the cattle industry (and, indirectly, processing industry) for which more grazing land is wanted.[1/] The same motivation is undoubtedly behind the programme in Alberta. However, ARDA has not been used to build community pastures in Manitoba; in that province it is believed that much the same ends can be served, at less cost, by encouraging the development of private grazing lands. In support of this view may be cited the $140,000 cost to ARDA of assisting Interlake farmers to clear 20,000 acres for pasture in contrast to $700,000-$800,000 for 20,000 acres in community pasture in Northern Saskatchewan.[2/] Development on private lands has the added advantage that the assistance can be more easily limited to farmers in need. Arguments in favour of private pastures become irrelevant, however, if the farmers -- particularly small ones -- have no unused land which could be converted for grazing.

The pastures appear to have played a limited role as a means to increase cattle population. Rough calculations suggest that, in Saskatchewan, the capacity increase

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1/ That Saskatchewan farmers do not convert wasteland or cropland to pasture, or improve native pasture, at the rate deemed "desirable", might seem to suggest that the anticipated returns are not sufficiently attractive.

2/ The lower cost shown in Manitoba is due partly to the absence of land purchase, and partly to the larger share of development costs borne by farmers.

attributable to the four-year ARDA programme would not greatly exceed 50,000 head,[1] equivalent to about 2 per cent of the provincial total. This may exceed the growth that would have been obtained in the absence of the ARDA programme, but is well short of the 80,000 average annual increase that prevailed through the fifties. Consequently, it is judged unlikely that the pasture programme can be of major assistance in stimulating the growth of the meat packing industry. The weakness of the cattle supply in Saskatchewan is not merely in numbers, but in the year-to-year fluctuations and the absence of area concentration.[2] The pastures were helpful in encouraging livestock build-up in several areas, but there is no assurance that it was, or will be, sufficient to affect the level of packing plant operations.

C. FARM ADJUSTMENT

The distinction between adjustments in land use and the more basic changes required to assist genuine economic adjustment in rural areas has been brought out in the preceding section. The former has been a major concern during the early ARDA years, but changes initiated have seldom involved the closing down of farming in marginal areas or in structural reorganization of farming communities. In many projects the land for which alternate

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[1] The programme approved to July 1966 will add approximately 415,000 acres to community grazing facilities, including co-op pastures. If we ignore the fact that some portion was previously used for grazing, this would provide for an additional 40,000 head (basis: 10 acres/cow which is the average for operating pastures). A further allowance for improvements which raise carrying capacity on existing acreage might bring the total increase to 50,000.

[2] From J. A. Brown, op. cit.: "Officials of packing plant companies have indicated many times that Saskatchewan does not have a high enough concentration of animals on a stable basis to support a strong secondary industry."

use is sought is no longer actively used for agriculture -- if, indeed, it ever was. The adjustment ARDA promotes is to find some use in forestry, wildlife, parks, etc., for wasteland and abandoned farms and woodlots as a source of income and as a means to strengthen the local tax base. In such cases, one might say, the labour adjustment has already taken place and the ARDA role is rather one of salvaging the resources which remain. While there are exceptions, the ARDA programme is not noteworthy for its efforts to combat rural poverty through assisting the removal of farmers whose land and prospects are poor.

One possible exception would be the Saskatchewan pasture programme. Although we think it fair to say that the primary objective has been to put more land into grazing, the programme's sponsors have always stressed the possibilities thus offered for assisting farmers to leave poor land, and this should be counted among the objectives. But how many farmers would be affected? To October 1965 (at which time approximately half the present total acreage was acquired), the province had purchased land from some 500 clients, including an unknown number of whole farm units. It seems likely that several hundred farmers relocated as a result of the ARDA pasture programme. Though not a drastic reduction in a province where over 36,000 farms were classified as poor in Table 2-3, this was probably ARDA's largest single contribution to the problem of excess labour in agriculture. From the standpoint of effective action to improve incomes, the results are more uncertain. A recent study, which reports on two ARDA pastures and 18 families whose farms were purchased, found that the majority resettled in farming, most of them on land no better than they had before. Five of the 18 saw their position as "improved" but 11 considered themselves worse off (the balance reserving judgment). [1/]

[1/] James A. Abramson, A Study of the Effects of Displacement on Farmers Whose Land Was Purchased for Two Community Pastures in Saskatchewan, Canadian Centre for Community Studies, 1966.

It is noteworthy that, for "rehabilitation", the programme placed chief reliance on the purchase price and minor moving grants; little or no provision was made for advisory services or for training. While it is true that case studies of only two of more than 40 projects cannot be used to generalize for the programme as a whole, the findings in these two cases are clearly not encouraging.

It could be argued, however, that the nation-wide ARDA programme has had some positive effect in breaking down the basic disinclination to think in terms of rural population adjustment among farmers, or by local authorities and provincial governments. ARDA's former director, Mr. A. T. Davidson, when asked to comment on the degree of resistance encountered to moving people out of an area, replied as follows:

> "First of all I should say little of it has been done. But I would say that there is far less resistance to the idea that people should move to employment elsewhere, if it is not available where they are... than I thought there would be when I first came into the program. At that time I thought this would be a major stumbling block -- the feeling of rural people that they wished to maintain the status quo and wished to increase incomes where they are now located at any cost. But we do not find that.... We can usually discuss the mobility of people now without an argument. "[1/]

1/ Special Senate Committee on Land Use, Hearings, December 3, 1963. In the same document Senator Taylor (Westmorland, New Brunswick) reports speeches made in his own province "in which I said I felt the Governments together with individuals residing in those areas, where there was not a hope of ever becoming self-supporting or making any agricultural progress, that they should be moved out. After the first two or three speeches that I made along those lines I was almost thrown out of the hall, but today there is a different attitude."

The discussions generated by ARDA, the research findings, the formation of local committees and the interchange with senior agency personnel could be among the factors that made possible the more forthright approach to farm adjustments embodied in the Second Agreement.

The two major additions are the provisions for farm consolidation and for rehabilitation described briefly in earlier chapters and analyzed in more detail below. Though the response has been mixed, programmes of this kind have already been instituted or considered for adoption in most eastern provinces and Manitoba.

Rehabilitation

The view that the low-income farmer will be better off if he gives up farming is obviously based on the gap between the average income of urban wage-earners and the average income of farmers. There is, however, no hard and fast rule. Whether or not the move is indeed financially advantageous for a low-income farmer depends mainly on the level of demand in urban labour markets and on his personal qualifications for employment.[1/] Obviously, at times of high cyclical unemployment, a programme for accelerated rural-urban migration would compound the pressure of excess labour supply in the cities and might impose tremendous hardships on the migrants themselves. Even when the general level of employment is high, it does not automatically follow that the earnings in the city will substantially exceed the size of the potential income stream given up on the farm.

Consider the hypothetical but, according to census statistics, not unrealistic example of an operator with under $3,750 gross sales, a net farm income of $1,500 per year (including income in kind), plus $600 in off-farm earnings. On the basis of the minimum rates for unskilled

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1/ In a more rigorous discussion one would have to take into account the effect of the move on other family members, and particularly on the future prospects of the children.

labour, such an operator might earn as little as $2,600 from steady employment in some towns. He would be slightly better off than on the farm if one can assume no marked preference for farm life, no unemployment in successive years, negligible costs of moving and no difference in living costs -- but there is not much margin.

The chances for substantial net gains can be improved by formal training, as illustrated in another example where a farmer with a somewhat higher total net income ($3,000) comes under the ARDA rehabilitation section and takes a nine-months' training course. Say that his urban earnings will average $4,500 over the next 30 years, a net addition of $1,500 annually. One could allow for some loss of "psychic income" and still show a net benefit of (say) $1,200 a year; over 30 years, discounted at 6 per cent, this yields a present value of $16,512. For comparison with the cost, we arbitrarily take $1,000 to represent the cost of advisory services and administration to be borne by ARDA and $4,000 to cover the cost of moving and training[1/] -- a total of $5,000 invested from public funds. Adding costs incurred by the trainee, including loss of earnings during the training period, would likely leave total costs still around half of discounted benefits. Any educational upgrading that may be necessary prior to admittance to a training course will, however, reduce the net financial gain.

The two examples (which are far from considering all aspects of each case), illustrate that the mere transfer of underemployed rural manpower to cities does not necessarily result in a net gain to society, but that there is a very strong case for it when migrants can be assisted to acquire the skills that will remove them from the unskilled urban labour force.

[1/] The estimate covers moving expenses, allowance to trainee, and cost of the institution itself (the latter based on cost per student as supplied by the Saskatchewan Technical Institute).

Training, it might be argued, is less an ARDA responsibility than one which falls to the Department of Manpower and Immigration and provincial training agencies. Nevertheless, there are good reasons why ARDA should provide complementary rehabilitation services. A clearly stated responsibility for assistance in off-farm rehabilitation reduces the chances that land purchases involved in ARDA's development projects will result in very small or even negative net benefits to the former owners. A second reason for ARDA involvement is the gap that separates the potential rural clientele of a rehabilitation programme and the multiple manpower services becoming available in urban centres. If ARDA were to have staff who are more accessible to farmers, as in Ontario,[1/] the number of clients for rehabilitation would likely increase.

While the benefit-cost ratio, as estimated above, could be still higher in the case of a young man who will take more training and who will have another 40 years in the labour force, for older men the benefit is likely to be very much smaller -- perhaps non-existent. Age, education and inclinations do not argue the advisability of retraining for urban employment all persons to whom the ARDA Agreement's rehabilitation section applies. Under certain circumstances, it is possible to show a net benefit from selling out farm assets and early retirement, even for a low-income operator whose investment is bound to be modest. In many circumstances, when ARDA purchases the farm, the owner's freed assets may well earn more in government bonds or other investment than they did in agriculture, and if the farmhouse can be retained -- so that no new outlays for accommodation are necessary -- the case for retirement will be a strong one. This is another form of adjustment for which provision is made under the Second ARDA Agreement. As an additional assistance in early retirement for operators in

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[1/] ARDA in Ontario is using counsellors supplied by the provincial Department of Education.

the age group 55 to 65, ARDA may offer to pay a supplement which will bring total income to $1,200. Society's interest in applying this clause lies partly in the release of land to farmers whose enterprise is capable of expansion and partly in the alleviation of extreme distress.

Rehabilitation, as accommodated under the Second Agreement, is a proposed supplementary element in ARDA programmes that involve the purchase of farm lands. According to rough calculations shown above, there is a strong probability that if the former owner receives training and is assisted into urban employment, rehabilitation costs will be amply compensated. Such compensation, however, may not be evident if the former owner retires or becomes a recipient of social assistance. Yet, in our view, if the situation of a low-income rural family is thus improved, any costs exceeding the market value of the assets acquired should be weighed against the social purpose achieved and not charged against the enterprise for which the land is to be used. Accordingly, when examining the farm consolidation programme below, the cost of supplementary income for the former owner is not included with the cost of consolidation. For the same reason, the benefits of rehabilitation are not considered as part of the benefits from the consolidation programme because society could offer rehabilitation without consolidation and simply forgo any net income attributable to the land and buildings of the former farm unit.

Farm consolidation

Public intervention to facilitate the enlargement of uneconomic-sized farms is central to the new approach of ARDA under the Second Agreement and one which seems to strike closer to the roots of poverty than earlier farm programmes. In Ontario, where farm consolidation is now being implemented, candidates will be drawn largely from farms with gross sales in the $4,000-$6,000 range.

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They are to be farms that have potential,[1] but can demonstrate a need for help; although there are no formal clauses to this effect, the intention is said to be to exclude farmers whose physical and financial resources would permit them to obtain long-term credit from existing sources. The $100/acre maximum that ARDA will pay for the land is another limitation on the applicability of the programme.

In one sense, the farm consolidation programme is another form of subsidized credit and could be conceived as an extension to the existing programme administered by the Farm Credit Corporation. Farms purchased are to be made available to consolidators on a rental basis for an initial five-year period which, as described in the Ontario project announcement, "will enable the farm operator to increase his productivity without tying up capital on land purchase". The provisions indicate that the intention is eventual purchase and repayment. By supplementing the cash purchase offer with assistance in training, moving and minimum retirement income maintenance to the vendor, the government may acquire land that would not be on the market otherwise for several years.

There is an obvious logic in a programme which has related the problem of labour surplus to the inadequate size of farms and which is based on the contention that some thinning of the ranks should make expansion possible for certain operators who do not now have economic units. Closer examination, however, reveals some grounds for concern. Chief of these, we believe, is that, although increasing returns to scale are reasonably expected, these are not necessarily large enough to overcome the effect of the generally low level of returns in small-scale agriculture to which the consolidated enterprise might still belong. While the income of the farmer is likely to increase as a result of consolidation, this increase is not necessarily in excess of all costs incurred.

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[1] In addition to sales level, the assessment of clients will take account of such factors as competence of the operator and long-run outlook for agriculture in the district.

Rough calculations suggest that, even when land costs are ignored, the change in net income is likely to be modest. Eventually, moreover, this added income will be called upon to provide repayment for the land and for ARDA-provided improvements.

We have constructed various models to explore the benefits from farm consolidation as it may involve a low-income operator not eligible for non-ARDA credit schemes. One of them was based on the case of two imaginary farmers, each deriving $2,000 annual net income (including imputed returns to owned assets as in national accounts statistics) from his unit valued at $14,000. Under what conditions would it be economic to consolidate them into one enterprise, provided that a satisfactory nonfarm alternative is available for one of them?

The range of assumed changes in inputs and outputs after consolidation, could be wide indeed: at one end extreme scale effects could be implied; at the other, no scale effects at all. Output at the joint pre-consolidation level and unchanged land and capital inputs, with no substitution for the labour of the departing farmer, implies a very substantial scale effect. In hypothetical examples one could go even further and allow production to increase on the consolidated farm to more than the previous joint output without increased capitalization (this alternative fits the extreme case in which the departing farmer contributed a negative marginal product). At the other extreme, it could be assumed that the new enterprise would have to use the same amount of inputs to maintain the pre-consolidation output; then the departing farmer's labour would have to be substituted fully, either by hiring labour or by adding capital investment.

Let us start out by following essentially the first proposition above: the joint net income of $4,000 will be maintained after all assets from the two units are consolidated without substituting either capital or hired labour for the departing farmer. From the viewpoint of the consolidator, this means a $14,000 investment with the prospect of $2,000 return. Having access to credit, he could borrow in a "free market" at (say) 7 per cent for a 20-year

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period, incurring payments of $1,300 annually. Still, he would clear $700 annually, have now $2,700 total net income from farming and the prospect for increased assets once the loan is paid off. So far, no public assistance has been assumed.

It is more likely that typical scale effects are not as favourable as the example postulated, and that some additional costs must be incurred by the consolidator to maintain the previous level of output. This could be in the form of hiring occasional labour, increasing the level of capitalization, or forgoing previously held off-farm employment. Any of these alternatives would reduce the $700 net benefit to the consolidator. For example: if he has to forgo $600 worth of off-farm employment, the prospective net benefit is $100 annually until the loan is paid off; this increment may not equal an "incentive wage" as earlier defined. Perhaps the availability of part-time off-farm employment[1/] is one factor which explains why consolidation has been so slow in the same areas where ARDA now proposes to implement such a programme: many of the low-income farmers, who for one reason or another did not, or could not, consider a radical transfer to an urban environment, have, in fact, found a form of adjustment which may be just as advantageous for them as expanding the farm.

Society may choose to offer inducements for consolidation, making the process financially more advantageous for the participant. If the farmer could qualify for the loans available at 5 per cent interest from the Farm Credit Corporation, his annual payments would be $1,100 (versus $1,300 at the assumed "free market" borrowing rate of 7 per cent). If, however, ARDA purchased the land (say) for $8,000 and rented it at 5 per cent of purchase price, the consolidator's annual cost on the lease plus installments on the remaining $6,000

[1/] Data for Ontario as a whole (Table 2-2) show that on farms with agriculture sales of $1,200-$2,499 and $2,500-$4,999, family income originating from the farm was only 31 and 57 per cent respectively.

loan (at 5 per cent interest and -- for simplicity -- a 20-year period) would be $880. Then the net gain even to a farmer who forgoes $600 worth of off-farm employment would leave $520 annual income increment while the lease lasts, and $300 thereafter.

Naturally, the more financial assistance forthcoming, the more likely will the farmer's net gain approach his "incentive wage" and the more attractive will consolidation appear to him even in the short run. From society's viewpoint, however, the stream of real benefits is represented by the annual increment as computed at the "free market" rate; what the farmer realizes in addition is a stream of costs to society incurred to make consolidation more attractive. It is not difficult to recognize in this example the potential application of the familiar principle of "making it pay" for the farmer, a principle to which objections were raised in connection with ARDA resource programmes. It is an additional but relevant consideration that, while we may assume that the consolidating farmer has a more pressing need for additional land than do certain of the eventual buyers in the absence of ARDA, it would be well to allow that other small-scale farmers may also be at a disadvantage when forced to bid in competition with the government. Land prices may rise generally consequent to a subsidized purchasing scheme, and this could counteract the unassisted consolidation process in the area.

Let us pause, however, and consider the following. A well-to-do farmer could indeed get the Farm Credit Corporation's 5 per cent loan which, in our example, implies a $200 annual subsidy. The ARDA assistance for consolidation is not much more: so long as our operator leases, he receives an additional $140 annually but, after five or ten years, he will pay an amount equivalent to that he would pay, had he qualified under Farm Credit in the first place. This is why it can be suggested that the consolidation plan is essentially a way to open up subsidized credit sources to those now excluded. The extra inducement in the form of deferment of the land purchase is a minor cost to the government which will also help to dispose quickly of the lands acquired from sellers.

The above example was not intended to represent the typical case which may come under the consolidation programme of ARDA, but to point out that the economic advantages are not always clear-cut. Both the farmers and society are likely to reap much larger benefits from that half of the consolidation equation that is removed to urban employment. Yet, precisely the opposite emphasis seems to prevail in the Nova Scotia and Ontario programmes. Though farmers will be assisted to move, this adjustment is incidental to the programme's primary aim, which is to get what land it can for potential consolidators. It seems an undesirable restriction that the Rehabilitation section is so narrowly linked to the consolidation scheme; we do not know whether this particular orientation is a necessary concession to political realities or implies an exaggerated conception of the benefits from consolidation.

Despite the general limitations listed above, there are circumstances in which the merits of a farm consolidation programme could be more strongly argued. Not all farm operators of the type considered eligible for consolidation can avail themselves of opportunities for retraining or find part-time work; if they are forced to leave the farm, they may go to unskilled jobs, a type of transfer which involves a doubtful benefit. At the same time, when the attachment to farming is strong, the added income will be worth more to the consolidator than the equivalent in city income. Nor is it irrelevant to count the skills and experience these men possess as farmers. Given the fact that they will remain on the farm, subsidized enlargement can be argued on the grounds of more effective use of existing labour and as a programme which, with the addition of advisory services, is likely to improve managerial ability. It is hard to escape the impression, however, that the group for whom the consolidation programme could promise benefits of some substance contains mainly the relatively young, intelligent, ambitious, healthy men and that a large number of low-income farmers in Canada could not realistically expect substantial benefits from either urban employment or farm consolidation. Other -- not necessarily work-related -- rehabilitation measures are obviously needed if that latter group is to get any benefits from the affluence of the rest of society.

As it concerns poor farmers, the consolidation programme appears to have rather limited potential but it is a possibility which should be compared with alternative measures for income improvement. One of the more attractive features of the consolidation-rehabilitation sections of the Second Agreement is that their implementation takes ARDA to the farm level where needs and capabilities can be individually assessed. This may help to overcome the gap between traditional extension services and the lower echelon of farm operators. The use of experts with experience in the farm credit field will, hopefully, reduce the danger that farmers may embark on enlargement when their best interest would be served through part-time farming (which no government programme seems to assist) or total removal to the city.

D. THE NEW FACE OF ARDA: COMPREHENSIVE PROGRAMMES IN AREA DEVELOPMENT

Development programmes for selected rural areas was an early commitment by ARDA which laid the groundwork for approval of the comprehensive rural development plans for the Mactaquac and Northeastern regions of New Brunswick in September 1966. When they look back on the early ARDA years, future students of Canadian policies may attach but minor importance to the land resource programmes, yet find historical significance in the ARDA initiative in the field of development planning for disadvantaged subregions.

The most outstanding example of preparation for a development programme has been the three-year work of BAEQ reported in a ten-volume proposal for the Lower St. Lawrence-Gaspe-Magdalene Islands region of Quebec (see Appendix D). The BAEQ team pioneered many new techniques of intensive local research. It established lines of communication with the people of these low-income areas and built up their hopes for a more prosperous future. What action will result from the plan is an eagerly awaited question which Quebec and Ottawa will answer, hopefully, in the near future. Previous reference has also been made to comprehensive area planning now in progress for Manitoba's Interlake, Eastern Nova Scotia and Prince Edward Island.

The apparently enthusiastic endorsement of the comprehensive rural development approach by the federal and by some of the provincial ARDA administrations is supported by a number of intellectuals whose research helped to pave the way for it. The present writers share the belief that substantial improvements in living standards can reasonably be expected if such programmes are undertaken at a scale, and with an emphasis, similar to the plans now accepted for implementation in New Brunswick. We also share the apprehension, evident in circles in and close to ARDA, that for reasons beyond their control many needy rural subregions of Canada will fail to attract such serious commitments on their behalf. This does not mean that there are only the practical problems of acceptance and implementation to overcome; the comprehensive rural development approach as envisaged by the Second ARDA Agreement is not entirely free from conceptual ambiguities and limitations.

According to Part VI of the Second Agreement, the objective is "to carry out a comprehensive rural development program in specially selected rural development areas" (SRDA's)... which "are subject to widespread low income; have major adjustment problems; and have recognized developmental potentials". Let us examine these criteria.

The data on poverty concentration provided in Tables 2-4 and 2-5 should easily convince the observer that ARDA could hardly be in difficulty finding areas subject to "widespread low income". The same data, however, show that a very substantial proportion of farm and rural nonfarm poverty is dispersed throughout relatively prosperous rural areas of Canada. To illustrate the point, the absolute figures on subregional poverty (Tables 2-4 and 2-5) have been recomputed into percentages (Table 5-1). Observe that 29 per cent of all poor farms in Canada are located in areas where poverty concentration is "Low" or "Low Medium"; the corresponding percentages are 73 in British Columbia, 52 in Ontario, 37 in Alberta and 33 in Saskatchewan. The values are somewhat different, but the overall picture is substantially the same, if rural

Table 5-1

The Subregional Concentration of Rural Poverty in Canada, 1961

Province	Counties (census divisions) having poverty concentration[1]					All Counties
	Low	Low Medium	Medium	High	Very High	
	A. Percentage distribution of the "hard core" farm poverty					
Newfoundland	-	-	15.7	83.7	0.6	100.0
Prince Edward Island	-	-	-	74.1	25.8	100.0
Nova Scotia	-	0.3	34.4	65.2	-	100.0
New Brunswick	-	4.1	24.3	46.0	25.5	100.0
Quebec	-	10.4	34.2	48.5	6.7	100.0
Ontario	10.2	41.8	38.1	8.0	1.6	100.0
Manitoba	-	24.6	20.9	25.8	28.8	100.0
Saskatchewan	2.1	30.5	43.6	23.6	-	100.0
Alberta	9.2	27.7	49.7	13.1	-	100.0
British Columbia	-	72.7	27.2	-	-	100.0
Canada[2]	3.6	24.9	36.1	28.7	6.5	100.0
	B. Percentage distribution of "poor" rural nonfarm male wage-earners					
Newfoundland	-	1.7	-	33.4	64.8	100.0
Prince Edward Island	-	-	-	45.2	54.7	100.0
Nova Scotia	-	16.2	14.5	43.7	25.4	100.0
New Brunswick	-	2.1	21.7	12.7	63.3	100.0
Quebec	0.1	7.2	37.5	23.3	31.6	100.0
Ontario	23.9	51.6	20.0	4.3	-	100.0
Manitoba	2.6	32.5	46.1	17.6	0.9	100.0
Saskatchewan	-	39.4	48.2	12.2	-	100.0
Alberta	1.7	73.4	24.8	-	-	100.0
British Columbia	54.0	45.9	-	-	-	100.0
Canada[2]	9.4	25.4	24.0	17.6	23.4	100.0

(1) For classification criteria and definitions, see Chapter 2, Tables 2-4 and 2-5. Due to the use of a more restrictive definition of farm poverty than of rural nonfarm poverty, the two parts of the Table above are not strictly comparable. Also, rural nonfarm poverty as used here is based on a concept different from the one in Chapter 2, Table 2-3.

(2) Canada, exclusive of Yukon and Northwest Territories.

Note: Percentages may not add to 100.0 due to rounding.

Source: Tables 2-4 and 2-5.

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nonfarm poverty is considered. Adding also the counties with "Medium" concentration, one must conclude that the majority of the Canadian rural poor are not concentrated in subregions characterized by widespread low incomes.

Area selection for comprehensive rural development is subjected to the additional criteria of "major adjustment problem" and "recognized developmental potential". Earlier in this study, "development" was defined as the promotion of growth in the locales where the citizens of concern to ARDA reside; in the absence of contrary evidence, it is assumed that by and large this is what is meant by the ARDA reference to development potential in SRDA's. It is more doubtful how well our operational definition of "adjustment" as "factor mobility" fits the ARDA terminology; it was indicated before that rural adjustment problems are frequently seen purely in terms of "irrational" land use. However, there is little doubt that in the New Brunswick case the adjustment problem was diagnosed primarily in terms of the use of human labour.

It is reasonable to suggest that all rural areas subject to "widespread low incomes" in the midst of an increasingly affluent society must have "major adjustment problems", but they may very well lack "recognized developmental potential". Needless to say, regions with developmental potential have better chances for rising income levels than those which do not, especially if the demand for labour induced by development will draw on local supply. If X and Y were previously underemployed in the rural sector, both gain from X's transfer out of the sector: presumably X will be employed at a higher wage (otherwise he should not go) and Y's labour -- now a relatively scarcer factor -- will tend to command greater returns. From the viewpoint of Y, it is of little consequence whether X transfers to new employment within or outside the region (unless the latter reduces demand for locally produced food); his gain -- and the gain to the rural sector -- comes from the downward adjustment in the agricultural labour force. In developing regions, the adjustment process will be quicker because X is more likely to seek and find new employment if there is demand for labour close to home.

Development may not solve all problems of adjustment, as poverty scattered throughout the prosperous regions well illustrates, but the hard-core problem of rural policies is how to promote adjustment in areas where "recognized developmental potential" is not in evidence. A similar ambiguity exists in the concept of Rural Development Areas of the regular programme.[1/] There also, area selection is made on the basis of "need", which is sure to indicate adjustment problems, but since ARDA's promise is development the result tends to be the promotion of agricultural and other rural enterprises of doubtful prospects.

To facilitate adjustment through systematic upgrading of the labour force and encouragement to its geographical and social mobility is critically important for all rural areas with widespread poverty and. in New Brunswick, this has been recognized by ARDA planners. But if they are also required to make a case for development in the region, that is, for local growth of basic industries, then two undesirable situations may arise. First, in the areas with the worst adjustment problems but lacking "recognized developmental potential" the promotion of adjustment may simply be abandoned. Second, in order to make acceptable the co-ordinated, large-scale promotion of adjustment which SRDA provisions allow, the planners will be under pressure to create development where it could not be economically justified.

There is also the problem of defining a region for planning purposes. Rural areas are not suitable units for development planning in a strongly urban-centred economy; how can the true potential of such peripheral areas be judged in and by itself when events in the centres of growth will ultimately decide their long-range prospects? This is the difficult but familiar problem of how far one can plan for the part, when no plan exists for the whole.

[1/] The difference between Rural Development Areas and Special Rural Development Areas is explained in Chapter 4.

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To reconcile the need for adjustment and the desire for development is the most difficult problem ARDA policy-designers must tackle, but the problem can be solved by wise selection of what to develop and where. The New Brunswick rural development plans seem to offer examples of striking the right balance. The Northeastern New Brunswick comprehensive development plan is essentially a vigorous programme of rural "adjustment" and, in as much as "development" is involved, it is mostly development of social amenities in the urban communities of the area. The combination reflects ARDA judgment at its best.

It appears that this plan relies strongly on the industrial potential foreseen for the area -- the new jobs in mining and associated development. Obviously, the existence of economic opportunity is a tremendous help in as much as a well-conceived "emptying out" of an area of marginal agriculture and the educational upgrading of its residents can be linked directly to the strengthening of the educational and housing facilities of nearby urban centres. But it may be suggested that these measures have sufficient intrinsic merit not to require justification in terms of development potential.

For the remote, isolated settlements of Northeastern New Brunswick, the ARDA programme offers what a poverty-stricken area needs the most: the abandonment of marginal farming, assistance in relocation, good schools for the young, education and training for the unskilled, early retirement for the elderly. This is what one hopes that all rural areas with widespread low incomes and major adjustment problems will be offered eventually, regardless of whether or not the regions concerned can attract new industry.

It may be that in the case of Northeastern New Brunswick the growth potential of the local centres is sufficient for the absorption of the unemployed and underemployed population of the surrounding area; it may also be that the residents destined to relocate will strongly prefer nearby versus more distant urban communities. But there are some disquieting signs of too much emphasis

on a person-by-person matching of foreseeable demand for labour and the supply expected from the rehabilitation of area residents. It would be regretable to witness SRDA planning as an encouragement to a potentially dangerous philosophy of subregional population autarchy.

All regions ought to have good educational facilities, good housing and other social amenities of high quality in their larger urban centres, and senior government should assist in providing them irrespective of the prospects for significant local economic development. It may be questioned whether the country could afford expenditures for all depressed areas on the scale proposed for the New Brunswick SRDA's. In the Northeastern SRDA alone, where population barely exceeds 100,000, Canadian taxpayers are scheduled to spend $62 million (in addition to New Brunswick's $27 million) whereas the entire ARDA programme in all provinces involved a cumulative federal expenditure of less than half this amount at the time the New Brunswick agreements were signed. Looking at potential benefits that may be forgone in the absence of such programmes, however, it seems reasonable to suggest that Canada cannot afford not to invest in other poverty-stricken areas on a similar scale.

Possible benefit-cost relationships may be illustrated by the following rough calculations. Taking equal annual expenditures and a 6 per cent interest rate, the $89 million total programme cost represents a present value of $66 million. How large should future benefits be to have an equal present value and thus satisfy the minimum efficiency criterion? The answer depends on the time distribution of benefits. Assuming, for example, that the stream of benefits will begin in the fifth year and accrue for 25 years thereafter, an annual income increment of $6.9 million would be required to equal the $66 million present value of costs and satisfy a benefit-cost ratio of 1:1.

The present writers are not in a position to estimate actual benefits that could be expected from various programme components. It would appear very likely, however, that a $6.9 million annual income increment could be assured from the up-grading of the present labour

force alone. In a region where average personal income is less than $500 annually and 10,000 workers are seriously underemployed or unemployed, it is not overly optimistic to expect that a massive retraining and adult education programme -- coupled with mobility incentives, subsidized housing and job placement assistance -- would lead to an annual income increase of at least $690 per worker.

Up-grading of the present labour force is not the only benefit expected. As it was briefly described in Chapter 4, the programme includes a complete reorganization of the regular school system, with the emphasis on new high school facilities, radical improvements in the settlement pattern, new roads, and industrial park, etc. All these may substantially increase the potential earnings of future generations of workers growing up in the area.

The lack of experience due to the absence of any previous programme of a similar nature makes it difficult to say whether the planners chose the best methods available for furthering programme objectives, but reasonable care has been taken to maximize the chances for success. The work by a number of provincial and federal agencies has been co-ordinated in these SRDA's and, what we find most encouraging, regular data gathering and evaluation by outside experts was built in as an integral part of the programme.

With its emphasis on education, labour mobility and social infrastructure, the New Brunswick SRDA programmes provide a model for rural policies that should be encouraged across Canada.

APPENDIX A

A SUPPLEMENT ON BENEFIT-COST ANALYSIS

by

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The undertaking of projects normally involves the use of resources that could otherwise be employed elsewhere. The value of capital, labour, and natural resources in alternative use is usually represented by the market-valued cost of these items.[1/] Cost is the amount necessary to bid a resource away from another use, and this bid will only be successful if it is high enough to compensate for the benefit that the resource would have generated in that other use. If a government wishes to act on behalf of its citizens, it must balance the benefits to be derived from a project against the costs involved. This balancing should properly be done incrementally; there are different possible scales on which a project may be undertaken; changes in cost and benefit should be compared on each step upward in size of project.

There are several reasons for believing that no governmental project should be carried on beyond the point where the ratio of marginal benefit to marginal cost is not at least 1; some of these are given in Chapter 1 of this study.

In attempts to screen projects for marginal benefit-cost ratios of less than 1, it is important that all costs and benefits be considered. In evaluating projects still in the planning stage, it will also be necessary to predict these levels of cost and benefit as precisely as possible. The next few sections of the paper will be devoted to consideration of these facets of benefit-cost analysis.

1/ A significant exception to this is currently unemployed labour, for which adjustment will be made later in the analysis.

Probabilities

Future costs and benefits can hardly ever be known with certainty. The best estimate that usually can be made is to identify probable occurrences. For example, benefits valued at $100,000 may be contemplated for a future year. However, one may know that such a project could also partially or completely fail. Therefore, three possible outcomes are foreseen: success ($100,000), partial success ($1-$99,999), and total failure (0). The partial-success category may be averaged out to $50,000.

Once possible outcomes have been identified, the probability of occurrences of the various outcomes should be estimated. Suppose it is decided that the project has a 50 per cent chance of full success, a 25 per cent chance of partial success, and a 25 per cent chance of failure. (The probabilities should always add to 100 per cent, indicating that all possible outcomes have been covered.)

The next step is to average the outcomes, weighted by their associated probabilities. This is done by multiplying each outcome by its probability, and summing the products. In the above example, the calculation is:

.5 ($100,000)	=	$50,000
.25($ 50,000)	=	12,500
.25(0)	=	0
Average expected outcome		$62,500

This average expected outcome may be called the central tendency of the probability distribution.

In "real world" situations, it will not always be easy to assign probabilities to various projects. However, just thinking in terms of probabilistic rather than certain outcomes will enable the avoidance of the very common error. It is all too easy to look at the maximum benefit portended by a project and describe this as the "expected" benefit. The proper "expected" benefit to use in benefit-cost calculation is the best approximation of the central tendency of a benefit distribution, not the maximum. The above project

should not be described as promising a risky $100,000 return. It should be said to promise a risky $62,500.

The term "risk" needs elaboration. Suppose the above project was being compared with another which consisted of a sure $62,000 benefit. Both projects would have the same "expected" return, or central tendency. The degree of possible deviation from the central tendency may be called the risk dimension of the probability distribution.

This risk dimension may have consideration relevance to the decision process. If one ignores administrative costs, a direct subsidy has a benefit-cost ratio of 1, and the benefit involved will not diverge from its central tendency. Suppose that a risky government investment project yields a ratio with a central tendency of 1.1, but with possible values within a range of 0 and 2.2. Would such a project really be a superior alternative to direct subsidy?

The most important fact needed in answering this question is an approximation of the marginal utility of income function of the beneficiaries. If the beneficiaries are low-income people, there may be a considerable fall-off in the affected marginal utility functions within the range of possible benefit variance. If this is true, there may be good reason for penalizing high-risk projects in the decision process.

To return to the example, suppose the project with the central tendency of 1.1 afforded possible benefits ranging from zero to $2,200 to the typical recipient. If the alternative is a $1,000 subsidy, a reasonable approximation of utility functions might well disclose that the utility obtained from the possibility of adding up to $1,200 to the $1,000 benefit would be less than the utility that would be lost by the possibility of having the benefit drop from $1,000 to zero.

There are two other variables that might have some applicability here. Variance in the cost distribution might interact with taxpayers' marginal utility of income functions

to produce an additional degree of risk aversion. Taxpayers and beneficiaries might also attach a negative utility to risk situations, irrespective of their income-utility functions. The second of these factors can be dismissed for lack of evidence. There is a reasonable justification for treating the first as immaterial. Taxpayers most likely have higher incomes than beneficiaries; therefore, their marginal utility functions could well have less slope. Additionally, the range of variance in costs is probably much less than that on benefits. Therefore, the analysis will proceed on the assumption that the only risk consideration which needs to be incorporated is that associated with benefit variance. This topic will be given further treatment after another is raised.

The distribution of costs and benefits

Subsidies have a benefit-cost ratio approximating 1. So also, from one point of view, do bank robberies. If different social significance is attached to the two phenomena, this probably is not attributable to quality differences between taxpayers and bank stockholders. Instead, it arises from an ethical evaluation of the "worthiness" of the recipient. To generalize, "benefits", for purposes of benefit-cost ratio determination, should ideally include only those benefits which are consistent with accepted public purpose. The most important practical aspect of this principle relates to the matter of benefits conferred on the already affluent. In general, benefit determination on a project should not take into account such receipts.

This does not necessarily lead to a "dog in the manger" attitude, where high-yield projects are rejected because they help the rich. Usually, if these projects are productive, there is little reason why charges for services cannot be levied. The charges made can then be counted as a public benefit; if the project is at all productive, these receipts will bring the benefit-cost ratio over 1.

There are exceptions. The benefits from some public projects cannot be priced easily. Roads are an example, although gasoline taxes represent an attempt to

price in proportion to benefits received. In general, however, pricing can be done. In instances where benefits to the non-poor can be charged for, only benefits accruing to the public in the form of receipts from sale of services, and to "worthy" recipients of public benefaction, should be counted.

This exclusion of private benefits that are inconsistent with specific public purposes may have an effect on the shape of the probability distribution of benefits. If the range of possible benefits on a project is wide, there is likelihood that, should the best outcomes occur, some beneficiaries might receive benefits in excess of publicly adjudged "need". Such benefits should be excluded. The effect of this exclusion is to shear off larger amounts of benefits as gross benefits increase, thus limiting the amount of upward dispersion in net benefits.

Allowance for risk

Proper "netting out" of private benefits to "unworthy" recipients will probably lessen the dispersion of the projected benefit distribution on a planned project. However, risk will not be removed. There are a number of ways of dealing with risk. Two major ways will be considered, and one will be indicated as preferable.

One popular method of treating risk is to discount risky future returns at a supernormal interest rate. The limitation of this method is that the risk penalty is made a function of time. Gambles which yield their outcomes in the near future will hardly be penalized at all in the decision process.

A second, and more correct method, is conversion to "certainty equivalents". Suppose, for example, three risk classifications are determined for projects -- no, low, high. (The classes could be quantitatively defined with the use of coefficients of variation of benefit distributions.) It is then possible, as a matter of policy, to set penalty factors for the low- and high-risk categories. Suppose a dollar of "no risk" benefits is regarded as being of equal value with

$1.10 of low-risk and $1.25 of high-risk benefits. In this case, risk can be adjusted for by multiplying low-risk benefits by the factor $(\frac{1}{1.10})$ or .91, and high-risk benefits by $(\frac{1}{1.25})$ or .8. Benefits multiplied by these risk-penalty factors are now reduced to certainty equivalents. Unless certainty-equivalent benefits from a project equal the 1.0 times cost of the sure direct subsidy, the project is inefficient and unacceptable.

Cost determination -- labour, and other noncapital factors

Most factors of production used in government projects, with the exception of capital, are purchased directly for the project. Thus their cost is easily reckoned. There are two important exceptions: one tends towards cost overstatement and one towards understatement.

Frequently public projects are undertaken in areas of unemployment or "underemployment". Workers must be hired at a wage prescribed by minimum wage laws or, sometimes, by union stipulations. If unemployed or "underemployed" workers are hired at these wages, the wages paid do not measure the usual definition of cost, the value of factors in alternative use. The money paid to these persons represents, at least in part, a transfer payment, and will probably be a substitute for current public assistance already being provided to such persons. Thus it is proper in reckoning the cost of a project, to exclude wages paid to the hitherto unemployed, and to count only the prior level of earnings as the cost of hiring the "underemployed".

A word of caution is needed here. If wage costs of the unemployed or "underemployed" are eliminated or reduced, it is not proper to count as a benefit of the project the alleviation of the poverty of these persons through their receipt of wages, or to count as a benefit the reduction in public assistance payments to these persons.

The possible area of cost understatement lies in administrative costs provided by existing governmental agencies for particular projects. The marginal cost of administrative services should be charged against individual projects. On any one project, these marginal costs

may appear unimportant, because most of the administrative costs appear "fixed". However, most of these "fixed" costs vary in the long run with the number of projects undertaken. Thus it may be reasonably accurate to approximate the marginal cost of administrative services on a project by determining the full cost of the factors employed on a straight pro rata basis; this determination should include supervisory as well as operational personnel.

Capital costs

If benefits are expressed in the form of central tendencies, rather than maxima, and if these central tendencies are then converted to certainty equivalents, the problem of risk has been adequately cared for. Therefore, cost of capital can be reckoned on the basis of the interest rate for risk-free capital. An approximation of this rate can be made by beginning with the current interest rate on long-term central government bonds. (On short-lived projects, some adjustment to short-term rates might be justified; this adjustment is not likely to be material.) Since the market interest rate on fixed-dollar obligations includes both a "pure" interest component and an allowance for inflation, an adjustment is required. Estimates of future benefits and costs are not normally constructed on the assumption of inflationary increases in the dollar values of cost items and benefits. Unless inflation has been included in cost and benefit predictions, it is proper to deduct an estimated annual rate of inflation from the annual interest rate.

A serious problem in capital cost determination lies in determining the value of capital in alternative use. If governments and corporations are thought of as competitors in a risk-capital market, there are two factors that will cause their cost of capital to be different, even though all benefit flows have been reduced to certainty equivalents.

Corporations pay a corporate income tax on common stock earnings. Thus the corporation, subject to approximately a 50 per cent tax, must reckon its cost of equity capital at twice the return it actually provides to its stockholders. Other things being equal, if we assumed

corporations financed with 70 per cent equity, this would mean that, where g equals the government borrowing rate, over-all corporate capital cost would be .7 (2g) plus .3 (g), or 1.7g.

Offsetting this tax disadvantage is another tax factor -- capital gains treatment. In Canada, corporate income withheld from dividends is exempt from personal tax, even though it can be collected in the form of capital gains. If half of corporate income is withheld, and the marginal tax bracket of the average stockholder is 50 per cent, then income withheld is worth twice as much to its owner as dividend or interest income. Therefore, the owner would regard the income from common stock as being worth, on a weighted average basis, .5(2g) + .5g, or 1.5g over all. Therefore, one would predict, in the absence of risk considerations, acceptable return to stockholders to be 1/1.5, or 2/3 the government borrowing rate of g. Now, correcting the original calculation of over-all corporate capital costs, .7(2) (2/3g) plus .3g = 1.2g.

Suppose these crude surmises are correct and, accordingly, the interest rate charged to public projects is raised from an original 1 to 1.2 times the inflation-adjusted government borrowing rate. Now government would not be diverting funds away from corporate investment without using them as productively as the corporation. The result of this curtailment of government demand for capital would very likely induce a decline in interest rates. This in turn could shift households who had been willing to save at the original government borrowing rate into extra consumption. Such a result would lessen aggregate economic efficiency, since some government projects in the 1-1.2g range would be forgone in exchange for "consumption" projects with an implicit return below the original government borrowing rate.

Without detailed knowledge of the interest elasticities of private, corporate, and government investment and savings functions (knowledge which isn't available) the point selected between a 1.2 factor applied to the central government borrowing rate, and a 1.0 factor, cannot be determined.

While there is no very satisfactory answer to this interest rate issue, a compromise solution can be proposed. The government borrowing rate should be adjusted downward, deducting from it the expected inflation rate. It is not unreasonable to believe that this downward adjustment would more than offset any adjustment for corporate tax treatment. The inflation adjustment would probably also compensate for the cost of the government financial transactions, which are not included in the rate paid to savers on government bonds. Therefore, hoping that all these adjustment factors will "wash out", this writer recommends that, until more careful studies are done, the unadjusted central government borrowing rate represents an adequate capital cost, so long as risk is treated by the certainty-equivalent method.

Secondary benefits

A number of types of benefits may be placed in this classification. Execution of a project may provide educational experiences to beneficiaries which are deemed consistent with public purposes. Processing plants or other private endeavors may be constructed as a result of an initial government project, and these may reduce unemployment and underemployment. This related employment may also have useful employment-generating "multiplier" effects.

In all cases, secondary benefits counted should be those that would not occur via direct transfer payment. As a second qualifying statement, any identified multiplier effect should be calculated on the basis of regional employment stimulation. If unemployment is a general problem, there are general economic policies, such as monetary measures and tax reductions, which are preferable alternatives to accepting projects which would otherwise have benefit-cost ratios below 1.

The educational benefits need no further treatment, other than to say that their value should be determined by the cost of providing them by alternative method, but they should not exceed the discounted value of the extra future attainments induced by the education.

If related firms expand because of the government programme and unemployed or underemployed resources are used, the costs measured by these firms will exceed costs borne by the society. The benefit should be measured by estimating the proportion of employees who would otherwise have been unemployed, and counting their wages up to some socially determined maximum (probably a legislated minimum wage) as a benefit. For the proportion underemployed, the difference between current (up to the same maximum) and prior earnings should be counted.

The increased regional spending that will develop because of these related firms will be given by the increase in the incomes of their employees.[1/] This new spending will stimulate regional employment to the extent that its recipients spend it regionally. (Most of it will no doubt go for goods produced outside the region.) To the extent that it is spent regionally, only part of it will go to the unemployed or underemployed. So, especially if the region where unemployment prevails is a small one, this multiplier is not likely to be very significant.

The reader will note that the multiplier effect of the direct benefits has not been considered. If the project should turn out to have a benefit-cost ratio of 1, there will be no gain from multiplier action above that from a direct subsidy. Therefore, a project deemed inefficient without the multiplier applied to benefits will remain so afterward. For projects tending towards higher benefit-cost ratios, the benefit multiplier is important, though, in determining project priorities. The development of a multiplier on such projects, after benefit-cost ratios of greater than 1 are established without it, will help direct government activity towards areas on the basis of the amount of their employment problems and the size of the areas where these problems persist.

[1/] This assumes no in-migration to the region, and no change in nonlabour prices.

The form of the analysis

The timing of benefits and costs is of the essence in the analysis, because it is time differential of expenses and benefits that gives rise to a project' s need for capital. Both central tendencies of costs, and certainty-equivalent central tendencies of benefits, should be classified according to the time period in which they occur. Secondary benefits should be included, with the exception of the regional multiplier on the primary benefits. Costs and benefits should then be discounted to the present at the government borrowing rate to establish a tentative benefit-cost ratio. If the benefit-cost ratio exceeds 1 at this point, the present value of benefits should be recalculated on the basis of the addition of the certainty equivalent of the primary benefit-multiplier effect. This will enable the computation of a final benefit-cost ratio.

Interproject decision relationships

So far projects have been treated as if the benefit relationships of each are independent of the existence of other projects. In fact, there may well be complement and substitute relationships in the benefit-cost functions. Consider an example of complementarity. Two dams are being contemplated on a river -- one for hydro and one for irrigation. Neither, viewed independently, provides adequate benefits to justify its cost. Then construction of both is contemplated, and the reservoir capacity of the up-stream hydro installation allows the impounding of enough extra run-off to even out seasonal irrigation water shortages. Thus, the joint benefit-cost ratio of the two projects is made higher than the separate ratios.

Persons responsible for the proposal and evaluation of government projects need to take possible complementarity into consideration. The way in which it should be done is to group complementary projects for decision-making purposes. Unless both (or all) of the complementary projects are to be undertaken, they should not be considered together. If a complementary project is included in a decision process and then not undertaken, the complementarity is irrelevant. In

the above example, only if both the hydro and irrigation dams were considered as a realistic policy alternative should their joint ratio be used.

Technical interrelationships can also run in the other direction. Adoption of one project may lower the benefit-cost ratio of another. Such substitute projects have a joint benefit-cost ratio below the individual ratios. Therefore the undertaking of both (or all) is less attractive than the individual projects. (When the technical substitute relationship is consequential enough, it is often loosely referred to as a condition of mutual exclusiveness.) Examples are not hard to find. Consider a farm well-drilling assistance programme and a programme for constructing local water reservoirs. If the benefit from the wells (water flow) is valued at its replacement cost (usually haulage), and if the construction of the local reservoir decreases haulage costs by providing closer water sources, the undertaking of the reservoir decreases the benefit-cost ratios of the wells.

Again, judgment needs to be applied in the substitution situation. When a project is considered, possible substitute projects should also be considered, and a superior one selected. Then the other projects should be reconsidered to see if their benefit-cost ratios still justify their acceptance. Failure to consider substitutes may result in the acceptance of a project with a relatively low benefit-cost ratio. Then after the project has been undertaken, if a superior substitute is considered, its benefit-cost ratio will have been so lowered by the adoption of the first project that it will have to be rejected. Or if it is accepted, the first project may be rendered unproductive so that it should not have been undertaken in the first place.

Complementary and substitute relationships should be considered, but not usually entered into the decision calculus, in the reckoning of benefit-cost ratios. If a project reinforces the value of a second, that reinforcement is of no concern unless the second project is to be undertaken. (In this case, the projects can be grouped for decision purposes.) If a project diminishes the value of another project in the planning stage, that diminution is

irrelevant because the second project does not have to be undertaken. (But the second project should be evaluated without the first also to see which affords a superior independent benefit-cost relationship.) If a project diminishes the value of an already operating project, but the mutual repulsion of the two has not reduced the benefit-cost ratio of the contemplated project to an unacceptable level, it should be undertaken. Possible failure of the first project will only be evidence of an initial wrong decision, on which costs were "sunk" unwisely.

One point should be clarified with respect to substitution effects. One project may lower the marginal productivity of another by supplanting its benefits. In this case, as noted, no recognition should be given to the effect on the second project.

There is another case besides substitution, which, though less usual, is possible. Project B may be hostile to Project A, actually interfering with the production process embodied in Project A, rather than simply rendering its benefits redundant. Such deleterious effects should be regarded as costs on Project B. If the harmful effects should occur to operations of a private firm, compensation will probably be an explicit expense. If the effects occur to another public project, or to the general public, compensation, if not directly made, should be imputed. Examples of interproject hostilities are such cases as a dam's interference with salmon development programmes, or a municipal sewer-laying project's disruption of highway use.

Effects of projects on factor and product prices

Prior to this, the analysis has made no explicit mention of possible general effects resulting from a project, where factor prices are bid up or product prices driven down because of a project. With the exception of cases where unemployed labour is hired, these general market effects will always exist to some degree. Usually they will be so small that their direct effect on the project decision will be negligible.

In local labour markets, the effect of a project may be quite important. In this case, cost projections would be made on the basis of estimated wage increases. As noted earlier, the effect of raising the wages of the underemployed, and of hiring the unemployed, should be considered in benefit calculations.

Beyond this consideration, if factor and product markets are characterized by competition, the entity of a project has the same effect on a market as the entity of a firm. If the project can pay competitive factor prices, value its benefits at market prices, and still obtain marginal benefit-cost ratios in excess of 1, the undertaking of the project will be abetting efficient resource allocation.

If monopoly exists in a product market, or monopsony in a factor market, the entry of a government project into such a market can breach the power of the market manipulator, and provide an accountable benefit. However, in general, government projects are not undertaken as a supplement to anti-combines or anti-conspiracy law. Therefore, it seems safe to assume that, in general, no benefits should be ascribed to projects because of their counter-monopoly effects.

To summarize, then, anticipated changes in product or factor prices that directly affect the values of cost and benefit items in a project should be considered in determining benefit-cost ratios. Beyond this, price effects should be excluded from the analysis.

APPENDIX B

SUPPLEMENTARY DATA TO CHAPTER 2

In Table 2-I and Figure 2-I (Chapter 2) rural-urban income differences are shown in terms of family incomes. A somewhat different approach is used in Table B-I below. Here, the "rural" labour force is identified with the agriculture, forestry, fishing and trapping industries; this, of course, is a departure from the residential definition of "rural" to which previous, family-based statistics referred. Yet the income gap appears to be roughly similar measured by either method. Using a five-year average figure to represent earned incomes in agriculture (1961 alone would have been somewhat misleading because of extremely low farm incomes that year) farmers appeared to earn 61 per cent, and those in "rural" industries as a group, 63 per cent of the 1961 "non-rural" average (Table B-I). The family-based statistics, in which incomes from all sources were considered, showed that farm families had roughly 63 per cent and nonfarm families 69 per cent of the average urban family income (see Figure 2-I).

Since industry-based statistics on incomes are available from the annual estimates of the Dominion Bureau of Statistics, it is generally known that earnings from primary industries -- excluding mining -- tend to be substantially lower than earnings from secondary and tertiary industries. However, the 1958 farm income survey revealed that over a third of the total family income on Canadian farms originated from off-farm sources. This resulted in some speculation that industry-based statistics exaggerate the disadvantage of the farm population. While the data available for this study could not satisfactorily overcome the incomparabilities in the two approaches, one thing emerges with reasonable certainty: net agricultural incomes per farm relative to nonagricultural earnings per worker indicate with reasonable accuracy the over-all income position of the average farm family. Apparently, nonfarm families get additional income from outside the industry of the head's employment just as farm families do, and the former may enjoy the additional advantage of having more family members in paid employment.

Table B-1

Earned Income per Worker by Industry,

Canada, 1961

Sector	Earned Income[1] (million $)	Labour Force[2] (thousands)	Earned Income per Worker ($)	Earned Income per Worker ("non-rural" average=100)
Agriculture[3]	1,203(1,503)	657	1,831(2,287)	49(61)
Forestry	335	111	3,018	81
Fishing and trapping	71	37	1,919	51
"Rural" industries[3]	1,609(1,909)	805	1,999(2,371)	53(63)
Mining	585	125	4,680	125
Manufacturing	5,735	1,440	3,983	106
Construction	1,557	442	3,523	
Transportation, communication and other utilities	2,400	618	3,883	104
Trade	3,531	1,016	3,475	93
Finance, insurance and real estate	946	235	4,026	108
Service industries	3,949	1,295	3,049	81
Public administration and defence	2,516	495	5,083	136
"Non-Rural" industries	21,219	5,666	3,745	100
All industries	22,828	6,472	3,527	94

(1) The concept of earned income is used here as in the Second Annual Review and other publications of the Economic Council of Canada. It is based on National Accounts statistics and includes: (a) wages, salaries and supplementary labour income; (b) net income received by farm operators from farm production; (c) net income of nonfarm unincorporated businesses. Earned income per capita is an approximate measure of labour productivity although, in components (b) and (c), elements of return to land and capital are also present.

(2) Includes unemployed. "Industry not specified" was pro-rated to industries listed.

(3) Figures in parentheses show corresponding values based on the 1959-63 average in agriculture. 1961 appears as a year with exceptionally low net returns from farming in National Accounts statistics. Census data used elsewhere in this study were not affected in the same way because the enumeration came early in the crop-year and sales figures reflect 1960 conditions.

Note: Figures may not add to totals due to rounding.

Source: Dominion Bureau of Statistics, National Accounts, Income and Expenditure, 1964 and Census of Canada, 1961.

Table B-2

Classification of Counties (Census Divisions) According to the Concentration of "Hard Core" Farm Poverty, 1961[1]

Low	Low Medium	Medium	High	Very High
		NEWFOUNDLAND		
C.D.6	-	C.D.'s 2, 5, 7	C.D.'s 1, 4, 8, 9	C.D. 3
		PRINCE EDWARD ISLAND		
-	-	-	Prince Queens	Kings
		NOVA SCOTIA		
-	Shelburne	Annapolis Cape Breton Digby Halifax Kings Richmond Yarmouth Hants	Antigonish Colchester Cumberland Guysborough Inverness Lunenburg Pictou Queens Victoria	-

Table B-2 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		NEW BRUNSWICK		
-	Victoria	Carleton	Albert	Charlotte
		Madawaska	Kings	Gloucester
		Restigouche	Northumberland	Kent
		Saint John	Queens	
		Sunbury	Westmorland	
			York	
		QUEBEC		
-	Arthabaska	Abitibi	Beauce	Charlevoix Est
	Beauharnois	Argenteuil	Bellechasse	Charlevoix Ouest
	Châteauguay	Bagot	Berthier	Gatineau
	Deux-Montagnes	Brome	Bonaventure	Kamouraska
	Îles-de-la-Madeleine	Chambly	Champlain	Montmagny
	Iberville	Chicoutimi	Dorchester	Montmorency No.1
	Lac St-Jean Est	Compton	Frontenac	
	Missisquoi	Drummond	Gaspé Ouest	
	Montmorency No. 2	Gaspé Est	Hull	
	Île-de-Montréal	Huntingdon	Laprairie	
	Rouville	Joliette	L'Islet	
	Shefford	Labelle	Maskinongé	
	Stanstead	Lac St-Jean Ouest	Matane	

Table B-2 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		QUEBEC (Cont'd.)		
-	St-Hyacinthe Verchères	L'Assomption Lévis Lotbinière Montcalm Île-Jésus Nicolet Québec Richmond Sherbrooke Soulanges St-Jean Témiscamingue Terrebonne Vaudreuil Wolfe Yamaska	Matapédia Mégantic Napierville Papineau Pontiac Portneuf Richelieu Rimouski Saguenay St-Maurice Témiscouata Rivière-du-Loup	-

Table B-2 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		ONTARIO		
Brant	Bruce	Algoma	Glengarry	Parry Sound
Halton	Carleton	Cochrane	Haliburton	
Kent	Dufferin	Frontenac	Renfrew	
Norfolk	Dundas	Grenville		
Oxford	Durham	Grey		
Peel	Elgin	Hastings		
Perth	Essex	Lanark		
Waterloo	Haldimand	Leeds		
York	Huron	Lennox & Addington		
	Kenora	Manitoulin		
	Lambton	Muskoka		
	Lincoln	Nipissing		
	Middlesex	Northumberland		
	Ontario	Peterborough		
	Prince Edward	Prescott		
	Russell	Rainy River		
	Simcoe	Stormont		
	Thunder Bay	Sudbury		
	Welland	Timiskaming		
	Wellington	Victoria		
	Wentworth			

Table B-2 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		MANITOBA		
-	C.D.'s 2, 3, 4, 6, 7, 8, 13, 20	C.D.'s 1, 9, 10, 11, 16	C.D.'s 5, 14, 15, 17	C.D.'s 12, 18, 19
		SASKATCHEWAN		
C.D. 8	C.D.'s 1, 2, 3, 4, 6, 7, 11, 12, 13	C.D.'s 5, 10, 14, 15, 17	C.D.'s 9, 16, 18	-
		ALBERTA		
C.D.'s 1, 2, 3, 5, 6	C.D.'s 4, 7, 8, 11	C.D.'s 9, 10, 13, 15	C.D.'s 12, 14	-
		BRITISH COLUMBIA		
-	C.D.'s 1, 3, 4, 5, 6, 7	C.D.'s 2, 8, 9, 10	-	-

(1) For explanation, definitions and source see Table 2-4 of the text.

Table B-3

Classification of Counties (Census Divisions) According to the Concentration of Low-Income Rural Nonfarm Wage-Earners, 1961 (1)

Low	Low Medium	Medium	High	Very High
		NEWFOUNDLAND		
-	C.D. 10	-	C.D.'s 1, 6	C.D.'s 2, 3, 4, 5, 7, 8, 9
		PRINCE EDWARD ISLAND		
-	-	-	Prince	Kings Queens
		NOVA SCOTIA		
	Cape Breton Halifax	Hants Kings	Annapolis Antigonish Colchester Lunenburg Pictou Queens Richmond Victoria Yarmouth	Cumberland Digby Guysborough Inverness Shelburne

Table B-3 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		NEW BRUNSWICK		
-	Saint John	Albert	Charlotte	Carleton
		Kings	York	Gloucester
		Queens		Kent
		Sunbury		Madawaska
		Westmorland		Northumberland
				Restigouche
				Victoria
		QUEBEC		
Chambly	Argenteuil	Abitibi	Bagot	Bonaventure
Île-Jésus	Beauharnois	Arthabaska	Beauce	Charlevoix Est
	Hull	Châteauguay	Bellechasse	Frontenac
	LaPrairie	Chicoutimi	Berthier	Gaspé Est
	Lévis	Deux-Montagnes	Brome	Gaspé Ouest
	Île-de-Montréal	Drummond	Champlain	Îles-de-la Madeleine
	Napierville	Gatineau	Charlevoix Ouest	Kamouraska
	Richmond	Huntingdon	Compton	Labelle
	Rouville	Iberville	Dorchester	Lac St-Jean Ouest
	Sherbrooke	Lac St-Jean Est	Joliette	L'Islet

Table B-3 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		QUEBEC (Cont'd.)		
	Soulanges	L'Assomption	Maskinongé	Matane
	St-Jean	Lotbinière	Nicolet	Matapédia
	Vaudreuil	Mégantic	Papineau	Montcalm
	Verchères	Missisquoi	Pontiac	Montmagny
		Montmorency No. 1	Rimouski	Témiscouata
		Montmorency No. 2	Rivière-du-Loup	
		Portneuf	Wolfe	
-	-	Québec	-	-
		Richelieu		
		Saguenay		
		Shefford		
		Stanstead		
		St-Hyacinthe		
		St-Maurice		
		Témiscamingue		
		Terrebonne		
		Yamaska		

Table B-3 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		ONTARIO		
Algoma	Brant	Bruce	Manitoulin	-
Carleton	Cochrane	Dufferin	Norfolk	
Durham	Essex	Dundas		
Frontenac	Grenville	Elgin		
Halton	Haldimand	Glengarry		
Ontario	Hastings	Grey		
Peel	Huron	Haliburton		
Sudbury	Kenora	Kent		
Thunder Bay	Lambton	Lanark		
Waterloo	Leeds	Muskoka		
Welland	Lennox & Addington	Parry Sound		
Wentworth	Lincoln	Prescott		
York	Middlesex	Rainy River		
	Nipissing			
	Northumberland			
	Oxford			
	Perth			
	Peterborough			
	Prince Edward			
	Renfrew			
	Russell			
	Simcoe			
	Stormont			
	Timiskaming			
	Victoria			
	Wellington			

Table B-3 (Cont'd.)

Low	Low Medium	Medium	High	Very High
		MANITOBA		
C.D. 20	C.D.'s 4, 5, 7, 8, 9, 16	C.D.'s 1, 2, 3, 6, 10, 12, 17, 19	C.D.'s 11, 13, 15, 18	C.D. 14
		SASKATCHEWAN		
-	C.D.'s 1, 2, 3, 6, 7, 8, 11, 13	C.D.'s 4, 5, 9, 10, 12, 14, 15, 18	C.D.'s 16, 17	-
		ALBERTA		
C.D. 1	C.D.'s 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14	C.D.'s 3, 13, 15	-	-
		BRITISH COLUMBIA		
C.D.'s 1, 2, 4, 5	C.D.'s 3, 6, 7, 8, 9, 10	-	-	-

(1) For explanation, definitions and source, see Table 2-5 of the text.

APPENDIX C

A NOTE ON PFRA MAJOR IRRIGATION PROJECTS

The St. Mary River Development (SMRD)

This project began with an older system which the Province of Alberta purchased in 1946. New construction, for which PFRA shared responsibility with the province, proceeded in two stages, the second one drawing to a close in the early sixties. In addition to new dams and distribution systems, substantial outlays were incurred on rehabilitation of the older works; much of the original acreage had suffered from "acute" water shortage. The end result has been the addition of roughly 100,000 acres (to an original 120,000 at time of take-over) and better service to existing acreage.

The larger portion of construction costs was borne by the federal government, which also supplied the engineering services. The province paid part of the construction cost and assumed the whole burden for land leveling, settlement and operating deficits in the development period. An estimate made in 1958 when the project was substantially completed assigned 55 per cent of the cost to the federal government, 45 per cent to the province.[1/] Since PFRA reported an expenditure of $29.7 million exclusive of engineering services (1965 Annual Report), we may infer that the total cost has been well above $50 million.

If this sum were spread over the whole of the irrigable area, the cost per acre would appear to be over $200; on the new acreage alone, it would of course be higher. Compared with the original estimates -- around $37 per acre in the Report of the Meeks Commission -- this is high-cost irrigation, though certainly much larger sums have been reported for the Missouri Basin projects

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1/ Report of the Irrigation Study Committee to the Government of Alberta, September 1958.

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just south of the border. According to estimates published in 1953, the first irrigation projects supplied by the new dams on the Missouri would involve costs up to $400 per acre; less desirable lands reserved for future development could range anywhere from $400 up to nearly $2,500 per acre.[1/]

Among irrigation projects, the SMRD is not alone in reporting a large discrepancy between estimated and actual costs. In the case of SMRD, the reason is partly inflation, partly that the amount of irrigable land has proved to be very much less than the expectations on which cost estimates were based.

The Bow River Irrigation Development (BRID)

The second large-scale irrigation project is also based on an earlier system, in this case one which had never been fully developed. When the private company was purchased by the federal government (1950), much of the irrigable land was unoccupied, essential maintenance had been neglected and major repairs were needed. By reconstructing the system and adding to it, it was claimed, 240,000 acres could be placed under irrigation, in the heart of the "dry bowl".

PFRA's interest appeared to centre on the possibilities for settlement. Among other factors that supported the decision to proceed was the steady progress in the neighbouring Eastern Irrigation District, where soils and climate were closely comparable. PFRA could also point to the favourable experience on its own resettlement project of the early forties at Rolling Hills -- a small corner of the Eastern Irrigation District. The policies adopted at that time (notably, low land price, adequate

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1/ From a report of the Missouri Basin Survey Commission, cited in Economics of Federal Irrigation Projects in the Missouri Basin, Agricultural Experiment Station, Brookings, S. D.

land preparation, location of experienced irrigators among the settlers) seemed likely to remove the main causes of failure in earlier irrigation projects.

The Bow River Project has been essentially a federal undertaking, with PFRA assuming responsibility for the main job of reconstruction, the new storage works and main canals and, on the "federal section", entire responsibility for development, resettlement and operation. Participation by the province was largely limited to construction on the "provincial section", a small extension which depends on the main system for water supply.

In terms of both cost and acreage, original expectations proved over-optimistic. Over large areas, the land proved to be unsuitable for irrigation due to soils of low arability or serious drainage problems; a part of the original acreage had to be cut out, while other sections have required extensive outlays for drainage works. On the provincial section, serious difficulties were encountered in the form of farmer opposition. All in all, the whole development down to the early sixties comes to no more than 85,000 acres under irrigation -- 70,000 on the federal section and 13,000 on the provincial. Since this includes the 57,000 acres irrigated at the time of take-over the addition is unimpressive, although one may allow that the original acreage was not well served.

According to PFRA's Annual Report for 1965, the cost to the federal government has been roughly $31.5 million, exclusive of the purchase price. The provincial section is reported to have cost $13 million in 1958.[1/] If the foregoing are roughly representative of the total cost involved, expenditures on the Bow River Project have been in excess of $500 per developed acre.

The South Saskatchewan River Development (SSRD)

The third of PFRA's major projects was begun in 1958. The main dam has been building for nine construction

1/ Report of the Alberta Committee, op. cit.

seasons and the present study (1966) coincides with the filling of the main reservoir. Full development, which is still many years away, will include important power uses, municipal water supply and recreation, as well as the irrigation. As it looks now, the South Saskatchewan will provide for irrigation on 200,000 acres; however, only about 50,000 acres are scheduled for early development and the switch to irrigation is expected to be gradual.

The reservoir phase, for which the federal government bears primary responsibility, was planned on the basis of a total cost of $96 million;[1/] the federal share will come to approximately 75 per cent. The Province of Saskatchewan is responsible for planning, developing and financing the major uses (irrigation, power, recreation) although the federal government will pay a minor portion of these costs as well. Power development is under construction but irrigation and recreation are largely in the planning stage. No very useful cost estimates can be given at this time.[2/]

1/ These figures are drawn from the 1958 agreement with the province. See South Saskatchewan River Development Project, Progress Report for the Period 1958-60, South Saskatchewan River Development Commission, Regina.

2/ Progress Report, ibid., estimates $50 million for power, $50 million for irrigation and $10 to $15 million for recreation.

APPENDIX D

ARDA PROVINCIAL PROGRAMME REVIEW

This review provides additional detail about the ARDA programme summarized in Chapter 4. The primary purpose is to inform; province-by-province evaluation would go beyond the objectives of the present study. However, the analysis of ARDA rationale in Chapter 5 generally applies to the activities described below.

The statistical tables in this Appendix follow the format and the codes used earlier in the Canada Summary (see Table 4-3). They are based on our own classification which groups all ARDA projects under 16 subcategories. To avoid repetitive comments, some programmes that are described in one provincial section are left unmentioned in others. As a result the comparative scope of ARDA programmes from province to province may not be represented faithfully. Interprovincial comparisons based on this Appendix will also be affected by the necessity of limiting the discussion to projects on file up to July 31, 1966. Because ARDA is still in its early stage, even a few months' extension or reduction in the period covered would cause substantial differences.

A. THE ATLANTIC PROVINCES

During the term of the first agreements, ARDA in the Atlantic Provinces, as in many other parts of Canada, remained a collection of small, unco-ordinated action and research projects. The ARDA Catalogue lists 187 projects approved in the four provinces at a total shareable cost of $5.2 million, an average of less than $30,000 each. The following one-and-a-half years brought some acceleration in the approval and execution of programmes but the new approaches which might transform ARDA into a more significant force for economic growth have only partly and very recently developed beyond the planning stage.

As one contemplates these meagre accomplishments and the more ambitious promises for the future, it is necessary to consider some aspects of rural development and relevant institutional arrangements as they confronted ARDA in the Atlantic area.

(1) The expression "pockets of rural poverty" frequently encountered in the literature would be of little use in describing the situation in this region where rural prosperity is more appropriately regarded as the exceptional condition. With a few exceptions, the urban areas are also characterized by high unemployment and low incomes. Thus, rural poverty in the Atlantic Provinces must be placed in the context of over-all regional retardation.

(2) Only a small proportion of the population is dependent on commercial farming for its livelihood, but a relatively large segment on forestry and fishing supplemented by subsistence agriculture. In any part of Canada measures to improve the output potential of commercial farms have dubious prospects for reaching the low-income rural residents; in the Atlantic Region such measures are even less relevant.

(3) The initial years of ARDA in the Atlantic Region coincided with a general drive towards change and progress and a growing acceptance of the idea that massive government intervention is needed to reduce the comparative disadvantages vis-à-vis the rest of Canada. The search for ways and means to accelerate economic growth fostered an atmosphere favourable to planning which, in turn, favoured a comprehensive approach to rural development. It is not accidental that New Brunswick was the first Canadian province to launch long-range area development plans under ARDA; similar endeavours in the other Atlantic Provinces may be expected to follow.

(4) Nevertheless, minor projects have predominated to date. Doubtless a major reason is the fact that ARDA is a shared-cost programme, demanding in most cases proportionally high provincial and local financing.

This condition works with particular hardship on the poorer provinces. Tending to rectify this situation and contributing to the broader scope of recent ARDA planning is the establishment of the Fund for Rural Economic Development (1966) and co-ordination with other federal programmes with more substantial federal participation (e.g., manpower mobility).

(5) By the end of the time period covered by this study, it was reasonably clear that in the Atlantic Region ARDA will become an important medium for channeling federal funds into the rural economy. However, to evaluate the federal role in rural development from ARDA plans alone would be misleading because there is a considerable complementarity with other programmes. The same, of course, is true of other parts of Canada, but the Atlantic Provinces are unique in the presence of a special federal agency -- the Atlantic Development Board, established in 1963. With an initial $100 million fund (renewed by an additional $50 million in 1966) this agency has been the source of major infrastructure investments -- electric power development, road construction, industrial parks, water supply, pollution abatement and research. In addition, almost the entire Atlantic Region is a "designated area" -- eligible for assistance in locating industries under the Area Development Agency (Canada Department of Industry).

NEWFOUNDLAND

The history of ARDA in the two island provinces will be summarized quite briefly. Newfoundland, not surprisingly, ranks among the smaller participants. While the $1.8 million in federal commitments compares favourably with the $1 million programme in Prince Edward Island, the rural population in Newfoundland is approximately three times as large. On a per capita basis,

Table D-1

ARDA Project Summary: Newfoundland

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund		Total Cost(1)	Federal ARDA Expenditures
		ARDA Funds			
		Federal	Provincial		
		(Thousands of dollars)			
12	Direct assistance to farmers (breaking and clearing)	255	255	510	217
13	Assistance to community and co-operative enterprises (community pastures)	137	137	275	70
16	Forestry projects (reforestation)	107	107	213	199
17	Recreation and tourism (park developments)	197	197	393	72
18	Assistance to fishermen	238	238	475	54
19	Miscellaneous rural development projects	15	15	31	-
20	Rural development staff training, information	83	64	146	50
	Action projects, total	1,031	1,012	2,043	663

Table D-1 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund			Federal ARDA Expenditures
		ARDA Funds		Total Cost (1)	
		Federal	Provincial		
		(Thousands of dollars)			
21	Subregional studies and area development plans				
	Rural community studies	55	7	61	24
	Development and action programmes	31	-	31	13
22	General economic and socio-psychological research not covered by 21 (income and employment, education, rural credit, co-operatives, housings, etc.)	273	81	363	196
23	Studies on specific industries, products or services not covered by 21				
	Agriculture	113	108	221	64
	Tourism and recreation	50	20	70	2
	Other	14	-	14	11
24	Canada Land Inventory	197	-	197	96
25	Land resource use studies not covered by 21 and 24	41	5	46	9
	Research projects, total	773	221	1,001	416
	Grand Total	1,804	1,233	3,045	1,079

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

Table D-2

ARDA Project Summary: Prince Edward Island

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost(1)	Federal ARDA Expenditures
			(Thousands of dollars)		
13	Assistance to community and co-operative enterprises				
	Community pastures	164	141	305	87
	Blueberry projects	30	30	59	12
14	Water and natural resource management				
	Construction and maintenance of earth dams	133	139	314	80
	Water conservation	120	226	346	-
16	Forestry projects (land acquisition and development)	35	35	70	27
17	Recreation and tourism (land acquisitions, park development)	63	63	126	46
19	Miscellaneous rural development projects	31	31	62	-
20	Rural development staff and training, information services				
	Rural development staff and training	43	24	67	26
	Information service	22	7	29	5
	Action projects, total	641	695	1,379	282

Table D-2 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost (1)	Federal ARDA Expenditures
				(Thousands of dollars)	
21	Subregional studies and area development plans				
	Rural development plans	227	119	346	78
	Area research (Pictou Co.)	50	-	50	50
22	General economic and socio-psychological research not covered by 21	-	-	1	-
23	Studies on specific industries, products or services not covered by 21	10	10	21	7
24	Canada Land Inventory	87	-	87	33
	Research projects, total	375	130	504	168
	Grand Total	1,015	825	1,883	450

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

therefore, the ARDA commitment in Newfoundland has been very much lower.[1/]

Few of the project possibilities set forth in the First Agreement had relevance for a province where agriculture is barely present (a total of 1,752 farms in the 1961 Census, of which 456 were "commercial"); as previously stated, some difficulty has been experienced in obtaining project approval. The main activities comprise assistance to farmers for clearing and breaking, community pastures and blueberry projects; assistance to fishermen; and tourism developments. The availability of federal funds did contribute significantly to rural research and this has laid the groundwork for future ARDA planning (Table D-1).

PRINCE EDWARD ISLAND

Although agriculture is a major industry in Prince Edward Island and low-income farming widely prevalent, ARDA has been limited to minor development projects dispersed throughout the Island. Community pastures, the construction of small earth dams and recreational development accounted for most of the action projects. However, relatively larger sums were invested in area research, and the preparation of a comprehensive rural development plan for the Island as a whole is in its final stages.

Table D-2 summarizes the projects approved to July 30, 1966.

1/ Federal ARDA commitment (Table 4-4 above) divided by rural population, yields a per capita figure of $7.97 in Newfoundland, $14.4 in Prince Edward Island. For comparison, it is interesting to note that Saskatchewan records the highest per capita commitment ($18.21) in the period under review, and that several provinces, including Ontario, placed below Newfoundland.

NOVA SCOTIA

The ARDA programme approaches the $8 million level in Nova Scotia. For the period under review, this is the largest commitment of any province in the Atlantic Region and very little less than that of three of the four western provinces. However, the larger portion of this total dates from the most recent years; the total federal expenditure of $880, 000 reflects the low level of actual investment to date.

Programmes classified as "direct assistance to farmers" (Table D-3) consist, for the most part, of incentive grants -- for land clearing, surface ditching, tile drainage and construction of farm and community ponds. They are designed to reach farmers willing and able to expand or intensify their agricultural operation. Small-scale assistance has been made available to woodlot owners as well. The two categories account for roughly half the expenditure to date on "action" programmes. The balance, by and large, has been for land acquisition for forestry or recreation projects.

An impressive feature of the Nova Scotia approach has been the relatively large fraction allocated to research. Major efforts have been concentrated on the pilot area (Cape Breton Island and the five eastern counties of the mainland), which indicates Nova Scotia's strong interest in the opportunity for special area development.

To assess the impact of the early action programmes, it will be well to bear in mind the kind of income structure for which remedies were sought (see Table 2-2 above). The basic problems are of long standing and, over much of the province, may be traced back to the environment -- one not particularly favourable to agriculture. As one observer put it:

> "Topography throughout much of the province does not lend itself easily to efficient operation in this age of mechanization. High rainfall and a cool temperate climate have resulted in podzolization

of the soil with the result that soils are infertile and require heavy liming and fertilization before good crop production can be expected or attained. There is no doubt that the effects of climate and topography combine to create a situation where the costs of production are high, relative to other areas."[1/]

Over the last two decades, low income and poor prospects have effected a notable decline in farm numbers, but because land also has gone out of production the position of remaining farmers has not improved to the same degree. Improved acreage at the 1961 Census averaged only 40 acres per farm.

To this problem of inadequate acreage the new programme of farm consolidation is obviously addressed. This marks the first time in Canada that ARDA has sponsored farm consolidation on a large scale. In Nova Scotia, it means an important shift in emphasis as well as the commitment of more substantial funds for intervention.

Under the consolidation programme, the government will make purchase offers to farm or woodlot owners when -- according to provincial programme description -- "it would appear that the size of unit, type of operation or lack of managerial ability limits the income possibility of the operator to such a degree that a reasonable standard of living cannot be maintained". The lands so acquired will subsequently be placed at the disposal of other farmers to enlarge their present holdings; consolidated into new enterprises; put into alternate uses (e.g., community pastures, forest management, recreation, etc.); or held in conservation reserve.

1/ Proceedings of the Federal-Provincial Conference on Farm Enlargement and Consolidation, January 24, 25 and 26, 1966, Department of Forestry Publication No. 1152, Ottawa, Ontario. Excerpt from a paper by C. E. Henry, p. 38.

The lands to be used for enlargement will be leased to farmers of proven ability for a nominal rent. The amount will increase slowly to 3 per cent of the purchase price during the fifth year, at which time the lessee will be encouraged to buy; alternatively, he may renew the rental at 5 per cent of the initial purchase price. As an additional inducement, and to improve productivity, ARDA is prepared to make grants of $50 per cultivated acre for drainage and the use of lime and fertilizer, if required. The consolidation and land-use adjustment programme is administered by the Land Settlement Board, a provincial farm credit agency (which suggests good possibilities for integrating it with existing credit policies).

There has not been enough experience to judge how this programme works in practice. However, it is noteworthy that the subsidy involved in consolidation goes mainly to the man who will remain on the land. The seller gets only a "fair value" for the farm, which may not exceed the assessed value by more than 10 per cent; the consolidator, on the other hand, gets very advantageous leasing arrangements, in addition to a substantial development grant for improvements. The primary interest, it would appear, lies more in the commercialization of agriculture than in accelerating the transfer of labour from agriculture.

The province-wide farm enlargement and land-use programme is expected to be the major programme within the "regular" ARDA framework over the next few years. For the eastern part of the province (the pilot area), Nova Scotia is in the process of preparing a major area development plan. A number of studies were complete by the end of 1966, and a Joint Task Force (comprised of federal and provincial representatives) was co-ordinating the results of the research. The plan was expected to be completed in 1967. The cost, though as yet unknown, is certain to dwarf all previous ARDA expenditures in the province; the New Brunswick area development plans, which involve a 10-year programme totalling more than $100 million, might serve as a rough guide.

Table D-3

ARDA Project Summary: Nova Scotia

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost(1)	Federal ARDA Expenditures
			(Thousands of dollars)		
11	Farm purchase, consolidation, enlargement	1,666	1,666	3,332	-
12	Direct assistance to farmers				
	Land improvement policy (clearing, ditching and other use of heavy machinery)	229	229	887	138
	Tile drainage assistance	81	113	286	43
	Farm ponds (may include rural ponds not on individual farms)	73	109	291	20
13	Assistance to community and co-operative enterprises (community pastures)	108	98	240	51
14	Water management and development (erosion and flood control, dam maintenance)	230	230	524	30
15	Assistance to woodlot owners	115	115	235	55
16	Forestry projects (land acquisition and development)	402	402	809	112
17	Recreation and tourism (land acquisition and development)	119	119	239	100
19	Miscellaneous development projects	146	146	355	-
20	Rural development staff, training, information (rural development staff and training)	114	6	120	-
	Action projects, total	3,284	3,232	7,319	548

Table D-3 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost[1]	Federal ARDA Expenditures
				(Thousands of dollars)	
21	Subregional studies and area development plans				
	Pilot area: economic and social research	96	8	104	-
	Pilot area: feasibility studies	153	41	193	74
	Pilot area: physical surveys	196	3	199	108
	Other regional and community studies	31	20	50	21
22	General economic and socio-psychological research not covered in 21 (mostly educational research)	9	9	17	9
23	Studies on specific industries, products or services not covered by 21	102	69	172	17
24	Canada Land Inventory	184	-	184	82
25	Land resource use studies not covered by 21 and 24	7	7	14	1
26	Water research and engineering studies (groundwater research)	30	30	60	21
	Research projects, total	806	186	992	333
	Grand Total	4,090	3,418	8,311	881

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

Planning for development in eastern Nova Scotia confronts a special difficulty in the uncertainty which surrounds the future of coal mining. This heavily subsidized operation employs close to 7,000 workers (in Cape Breton county, approximately 20 per cent of the male labour force). Now that the federal government has been advised to plan for the gradual closing of the mines, long-range planning may have to encompass still further adjustments in the labour force. Another major unknown is the extent to which new industries can be attracted to the area. Vigorous promotion by the Nova Scotia Voluntary Planning Board, the Industrial Estates and other agencies has been very successful in the past few years, but substantially more new jobs would be needed to absorb surplus labour locally at an acceptable level of wages.

NEW BRUNSWICK

The search by government, business and the intellectual community for ways and means to tackle essential development problems was already under way when ARDA appeared in New Brunswick. Thus, while ARDA has participated -- and still participates -- in the limited assistance measures typical of the First Agreement, it was early recognized that ARDA could become the tool to foster more basic adjustments. In September 1966, New Brunswick became the first province to sign a comprehensive area development agreement with the federal government. Following a brief review of "regular" ARDA activities, attention will be focused on the main features of these long-range plans.

During the three-and-a-half years covered by the statistical tables of this study, approximately $1.7 million of federal ARDA funds were committed to projects in New Brunswick. Total commitment, with provincial contributions, was just under $3 million. Although this was less than half the ARDA total in Nova Scotia, the two provinces would be more closely comparable in the absence of the latter's recently approved farm consolidation programme (or after the expected ARDA sponsorship of a similar one in New Brunswick). Federal expenditures to date are very much the same in both provinces.

Assistance to farmers for soil conservation, tile drainage and farm ponds has been dominant. The New Brunswick farm programme has not allocated funds for land clearing, and the major emphasis has been on soil conservation which requires relatively large local contributions. The agricultural programme also includes a small number of community pastures.

One unique experiment was the consolidation and improvement of farms in a small area which provides about a third of provincial strawberry production. The plan was to reorganize the structure of farming by purchasing lands as they became available, regrouping them into enlarged units, and leasing to farmers of proven ability. With only $40,000 allocated to the project, the scheme is perhaps of less interest in itself than as the forerunner to the province-wide farm enlargement programme under the Farm Adjustment Act (June 1966). This Act established a Farm Adjustment Board with powers to purchase lands on the open market, lease them to farmers, and make loans which will permit a farmer to achieve a "viable" farm or woodlot. What part ARDA may play is as yet unknown.

The agricultural bias of the First and, to some extent, the Second ARDA Agreements is reflected in the lack of programmes designed to reach those outside commercial agriculture. This is a particularly severe limitation in a province which has over 10 per cent of the poorest rural nonfarm families in Canada. The only rural residents assisted by ARDA who are not necessarily farmers are the woodlot owners (eligible for grants to improve their woodlots and for recreational projects).

The amount of the research budget ($800,000) is much the same as Nova Scotia's and represents a relatively high percentage of the total ARDA appropriation. Comprehensive studies (demographic, economic, social, etc.) in Northeastern New Brunswick and the Mactaquac Region have been a main focus.

Table D-4

ARDA Project Summary: New Brunswick

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost (1)	Federal ARDA Expenditures
		(Thousands of dollars)			
11	Farm purchase, consolidation, enlargement (strawberry farms only, major consolidation programme still pending)	20	20	40	10
12	Direct assistance to farmers				
	Tile drainage	31	35	148	25
	Rural pond construction	28	28	99	12
	Soil conservation	262	309	1,323	246
13	Assistance to community and co-operative enterprises (community pastures)	101	62	195	86
14	Water and natural resource management (river erosion control, drainage outlets)	152	200	367	61
15	Assistance to woodlot owners (advisory service)	56	56	129	27
16	Forestry projects				
	Land purchases involving relocation of residents	25	25	49	22
	Other forestry projects	43	43	92	-
17	Recreation and tourism				
	Land acquisition for parks and camp sites	125	125	305	7
	Assistance to farmers for private recreational projects	28	28	110	-
19	Miscellaneous rural development projects	101	101	202	-
20	Rural development staff and training, information services	95	57	153	34
	Action projects, total	1,067	1,089	3,212	531

Table D-4 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost[1]	Federal ARDA Expenditures
		(Thousands of dollars)			
21	Subregional studies and area development plans				
	Northern N. B.: research and planning	275	11	285	249
	Mactaquac: research and planning	117	117	235	93
	Rural community studies	10	10	19	9
22	General economic and socio-psychological research not covered by 21	2	2	4	2
23	Studies on specific industries, products or services not covered by 21	57	57	113	-
24	Canada Land Inventory	157	-	157	670
	Research projects, total	617	196	813	1,023
	Grand Total	1,684	1,286	4,025	1,554

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

The Northeastern New Brunswick and Mactaquac rural development plans

The signing of the two comprehensive area development plans marked an important turning point in the history of ARDA in New Brunswick and, indirectly, in Canada as a whole. The plans are based on the acceptance of, and official commitment to, the need for a direct attack on low education and insufficient labour mobility, the factors which a growing consensus regards as the roots of rural poverty. It is also the first time in Canada that an attack on rural poverty is to be concentrated in specific areas on a scale which encourages hopes for success ($110 million over a 10-year period; see Table 4-5 in Chapter 4 above).

The two areas were selected on the basis of mixed criteria, including elements both of need and of development potential. The need for public action was very obviously present. Of the Northeastern Region (population 106,000), the Program Guide states:

> "The total labour force is estimated to be approximately 29,000 of which some 10,000 are seriously under-employed or permanently unemployed. In consequence, incomes are very low, averaging just over $500 per person or about one half of the average for the province and one-third of the average for the country as a whole."

The result of decades of poverty (and absence of a firm commitment to the equalization principle within the province):

> "Investments in social capital in the area, particularly in education, have lagged far behind most of the rest of the country. Out of a total of 258 schools in the area, about 160 have only one or two class rooms, and in many of these the teachers themselves have not studied beyond

grade 9. It is not surprising, therefore, that 36 per cent of the labour force have an education level of grade 4 or less... and only 17 per cent have had grade 9 or higher."[1/]

Where the situation does differ basically from the Gaspé in Quebec or the Interlake in Manitoba is that New Brunswick's pilot areas more clearly possess development potential. In Northeastern New Brunswick, an expansion of mining is already under way; additional job opportunities are expected to arise through the stimulus to secondary and service industries and through the modernization of forestry operations by pulp and paper producers in the area. ARDA, therefore, has but a minor responsibility for the creation of employment; the primary task is one of seeing that the employment goes to residents of Northeastern New Brunswick rather than to in-migrants.

The fact that within the area itself there are likely to be attractive employment opportunities roughly equal in number to the unemployed and underemployed labour force has doubtless been a main factor in winning acceptance for the ARDA plan among those who tend to oppose government-sponsored depopulation of rural areas. However, while recognizing the distinct advantage to planning when employment prospects are favourable, one must not underestimate the formidable task implied by the decision to make the rural residents become participants. To achieve this, large numbers of people must be motivated to up-grade their education, take vocational training and move from the remoter sections of the interior to the growth centres along the Bay of Chaleur. The following measures constitute the essentials of the area development plan for the next ten years:

1. A major reorganization and improvement of the region's educational system by means of (a) consolidation of the existing small school districts, (b) construction

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[1/] Memorandum of Agreement Made between the Government of Canada and the Government of New Brunswick, September 22, 1966, Schedule B (mimeograph).

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of schools on a large scale, with the emphasis on modern high school facilities; (c) the creation of a closed-circuit educational television system to enrich the curriculum and assist in the adult education programme.

2. Technical and vocational training for some 700 workers annually, and educational up-grading for 2,000-2,400 adults annually. This will involve the creation of new facilities, accelerated teacher training, substantial training allowances, and a pilot training programme suited to the needs of the area.

3. The relocation of approximately 3,700 households, mainly from the eastern portion of the region. The proposed measures include: (a) a programme of land acquisition to buy out willing sellers of the generally poor agricultural lands and badly overcut woodlots; (b) mobility grants and moving assistance beyond the amounts offered by the federal manpower programme; (c) compensation to owners of commercial property and churches in the depopulated small centres; (d) a major housing programme for the residents relocated in the six growth centres; (e) special assistance to household heads 55-65 years of age who could not otherwise maintain an income of at least $1,200 annually after the sale of their property to the government.

4. The rationalization of land use by selling or leasing viable agricultural units to farmers. The number of these is estimated to be not more than a hundred in the entire area. The rest of the approximately 400,000 acres to be purchased will be used according to a land-zoning plan and developed on the basis of economic criteria.

5. A series of development plans encompassing improvements to the transportation network of the area, investments in the inshore fisheries, creation of an industrial park, and recreational facilities for local users. Finally, minor development projects will be launched during the first few years of the plan to create job opportunities for those willing to move but not immediately employable.

The Mactaquac Region is adjacent to the hydro-electric dam and reservoir[1/] being constructed on the St. John River; its approximately 10,200 residents live on scattered small holdings and in a few declining communities. Partly due to a number of commuters who work outside the area, the average income is not as low as in the Northeast but nevertheless "71 per cent of the retired, 57 per cent of the farm, and 37 per cent of the part-time farm households received incomes of less than $2,050 per year from all sources" (Program Guide).

The major asset of the Mactaquac Region for local development is its advantageous location along the Trans-Canada Highway near a U.S. Interstate Highway outlet to be completed in the near future. The newly created reservoir together with the scenic attractions of the surrounding area, it is hoped, will retain the tourists entering the Maritime Region. The comprehensive plan involves the creation of a new town to serve as the centre for tourism and as a residence centre for those who relocate from remote parts of the region. Similar to the plan for Northeastern New Brunswick, it includes also land acquisition, resource rationalization and an educational and mobility programme.

To implement and administer these plans, a new provincial organization was formed (the Community Improvement Corporation) which will co-ordinate the work of the various provincial and federal agencies. A network

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1/ The total cost of the dam is about $78.3 million, financed by the New Brunswick Electric Power Commission with $20 million financial assistance from the Atlantic Development Board. While these investments were instrumental in arousing ARDA's interest in the region, they, and the relocation of residents from the flooded areas, are independent of the comprehensive plan here described.

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of general counsellors will also be established to inform the local population about the programmes available and to assist them in making the transition to an urban environment. Continued participation of the federal government in the area development programme was made dependent upon the effective involvement and participation of the local residents.

B. QUEBEC

Though surpassing all provinces in number of farms, Quebec has only a few small districts that can be considered first-class farmland. Defining "good farming areas" as those where 80 per cent of the products are available for sale, the Quebec Year Book names a handful of counties in the Montreal area, a part of the Eastern Townships, a narrow strip at Lake St. John and another on the south shore of the St. Lawrence. "The balance of Quebec farmland is really suitable only for the needs of local consumption."[1/] According to the statistics cited in Chapter 2, Quebec has 55,000 low-income farms and 69,000 rural nonfarm families below the poverty line. Thus, the dimensions of rural poverty appear particularly awesome in Quebec.

Historically, the province has played an active part both in extending settlement and in assisting agriculture generally. Aids to production embrace farm credit (dating back to 1936), assisted clearing, transport subventions, extension services and agricultural research, among others. A particularly heavy cost is that of the drainage programme -- a cost that farmers and municipalities tend to share in other provinces but which, in Quebec, is provided by the province. In the area of marketing, there has been assistance to co-operatives and, lately, a provincial marketing board which fixes prices for milk. Colonization, which established small marginal farms on the fringe of settlement, has involved substantial outlays over the years for production subsidies

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1/ Quebec Year Book, 1963, p. 281.

and direct relief payments. However, the colonization thrust was halted some years ago and efforts have been directed rather to the strengthening of farm units in the frontier areas. In the years immediately preceding ARDA, the province introduced higher scales of assistance and added subsidies for the transport of animals to slaughter. Also in these areas, the government has begun to buy up abandoned farms with a view to consolidating and enlarging small holdings.

The strong agricultural orientation has been clearly brought out in an analysis of provincial expenditures.[1/] As one example: expenditures on agriculture and colonization for 1960 totalled $40 million; the corresponding figure for Ontario was $9.3 million. The same study shows that, in the period 1954-60, expenditures on agriculture were increasing not only absolutely but relative to provincial expenditures as a whole. In Ontario and other provinces, budget shares assigned to agriculture have been declining.

Besides new measures of assistance, the early sixties saw a start made on long-range planning for development in particular areas. A main emphasis will be the development of regional specialties -- beef cattle in the Northwest, for example, poultry in certain counties, potatoes in others. There are plans for the expansion of market gardening and other speciality crops in the Montreal area, leaving more room in the market for expanded dairy production in less-favoured areas. The whole picture which emerges is that of a strong commitment to agriculture and a determination to improve its performance.

Given these goals -- an interest in planning and a growing concern for unemployment and low income within the province -- it is not surprising that Quebec had the largest ARDA budget of any province under the

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1/ Quebec Bureau of Statistics, Statistical Study on the Expenditures of the Quebec Government, 1964.

First Agreement (approximately $25 million). It was still well in the lead at the end of the study period. The main use of ARDA funds -- and doubtless a main reason for the large initial response -- has been a programme of stream and river improvements (building embankments, dredging channels and the like), a normal service provided by government for such purposes as flood control and improved drainage on adjacent lands. In a total appropriation of $29 million, more than $11 million was allocated to this programme (see Table B-5). A rough count yields 220 separate undertakings under the First Agreement with cost and scale varying widely.[1/]

Flood control and improved drainage for the adjacent agricultural lands provided the justification for bringing this on-going provincial programme under ARDA, but the significance of the agricultural benefits is very much in doubt. The financial commitment dropped sharply within the past year, which may mean fewer projects of this kind in the future; on the other hand, water and soil conservation plans indicate a possible shift to larger-scale comprehensive approaches, such as the Chaudière River development plan in Beauce County (total cost approximately $2 million).

Even without a river improvement programme, the allocation to action projects in Quebec would be relatively large. The other $10 million shown in Table D-5 is spread over diverse measures but heavily concentrated in the marginal fringe of agriculture. Approximately $5 million for example, has gone into the following: the loan of heavy machinery for clearing land (Abitibi and Gaspé); aid for purchase of beef cattle and one community pasture (Abitibi-Témiscamingue); measures to rehabilitate farm woodlots (Gaspé); blueberry projects (mainly in the Lac St. Jean area and Abitibi). These are mainly frontier regions (the term covers the Eastern Gaspé and

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1/ For example, a shareable cost of $9,900 to "remove obstructions in the St. Jean River, Gaspé"; $247,000 to "improve watercourses lower Rivière Noire and reclaim 1,690 acres in Drummond County".

the other districts named above) and as such had previously been designated as areas of special concern to the provincial government.[1] All are distinctly handicapped by such factors as poor soils (though a pocket of good land occurs around Lac St. Jean), short growing season and distance from markets; they account for a high percentage of what Quebec calls the "pseudo" farms -- inhabited but little cultivated -- and also of the full-time farms with gross sales below $1,200.[2]

In the special programmes designed for these areas may be detected an element of desperation. The Northwest, for example, has soils admitted to be poorly suited to forage due to drainage problems; nevertheless, argues one authority, its best agricultural use is the development of hay fields and pastures and "the raising of such livestock as they can nourish".[3] The very keen interest in blueberry projects is evidence of the determination to wrest income from even poorer land.

The ARDA programme includes some 20 blueberry projects, mainly in the Lac St. Jean area. The projects are co-operative in nature (a local syndicate must be formed to initiate the project and, subsequently, to run it) but development costs are borne by the government. These include land assembly, technical services and the development of production and marketing plans. Once in

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1/ Quebec Year Book, 1964-65.

2/ The "pseudo" farms do not appear in the statistics of Chapter 2 because farms with sales below $250 were excluded. When they are added, there are 33,000 farms in Quebec with gross sales below $1,200 (1961 Census). This includes some 10,000 part-time farms (other earnings unknown) and a roughly equal number of full-time farms with gross sales between $250 and $1,200; the remaining third are the pseudo farms -- little beyond a rural residence. Whether these people have other jobs, old age pensions or social aid, census statistics do not reveal.

3/ Quebec Year Book, op. cit., p. 379.

production, the plots are a source of income to syndicate members through a 20-day harvest season; in a good year, it is estimated, they may yield returns of $500 to $1,000 per family.[1/] However, the amount is much influenced by the number of pickers; the income cited appears to require five or six per family.

As a business venture, the blueberry projects leave much to be desired; the blueberry industry is notoriously unstable and the projects themselves do little to overcome the hazards of weather, insects, price fluctuations, etc. The burning of underbrush practised in this type of blueberry production increases fire hazards in the surrounding forests. The primary motive, it is evident, has been the need of clients (mainly sub-marginal farmers, settlers and labourers) and, in an area that appears to lack other resources for development, the ARDA programme will supply some added income.

Concerning the future of the projects, the present writers are not optimistic. The labour-intensive techniques adopted in Quebec (in contrast to machine picking in some other blueberry-growing regions of North America) make continued operation dependent on a pool of labour sufficiently poor that they will pick blueberries. Rising living standards appear to be the main factor in the declining fortunes of the industry since the depression, and it is worthy of notice that in the somewhat more prosperous districts of Northern Ontario, early ARDA efforts to revive the blueberry industry failed to elicit local response. The heavy dependence on child labour

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1/ The Blueberry Industry, ARDA document, Condensed Report No. 5, Department of Forestry, June 1966.

in the Quebec projects also seems oddly at variance with mainstream economic development at mid-twentieth century.[1/]

A second area which has been singled out for special attention comprises the whole eastern section of the province (roughly, from Quebec City east). Because it is more heavily populated (apart from the Eastern Gaspé) the task of raising income is perhaps more difficult than in the frontier regions and certainly the problems are immense. The farms are too small,[2/] the soils generally poor, the woodlots badly cut over and, in a region where 50 per cent of the population is rural, there are few industries apart from forestry to supply off-farm income. In the nine eastern counties (pop. 320, 000) per capita income has been placed at $700. It is estimated that 35 per cent of wage-earners are unemployed for at least six months a year and in some municipalities unemployment rises to 80 per cent in the winter months. These counties are the focus of the BAEQ programme, described below.

1/ It may be noted, that, subjected to benefit-cost analysis, the blueberry projects can be made to show a ratio exceeding unity (The Blueberry Industry, op. cit.). The result, in our opinion, is much influenced by unduly optimistic assumptions, though we cannot claim exhaustive study of the industry. A more comprehensive evaluation by ARDA is now in process.

2/ In the Rimouski district (Lower Gaspé) a 1956 survey placed the average arable area at 7 to 10 acres per farm; 74 per cent of the farms could not maintain their families from farming. (Cited in a brief presented to the Senate Land Use Hearings, March 22, 1962, by M. Jean-Baptiste Lanctôt, representing La Société Canadienne d'Établissement Rural.

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Table D-5

ARDA Project Summary: Quebec

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost (1)	Federal ARDA Expenditures
				(Thousands of dollars)	
12	Direct assistance to farmers				
	For use of heavy machinery	980	980	1,960	980
	For northern cattle enterprises	332	332	1,137	216
13	Assistance to community and co-operative enterprises				
	Community pasture projects	42	41	82	23
	Blueberry projects	890	890	1,780	596
14	Water and natural resource management (mainly water-way improvements for drainage, erosion and flood control)	5,577	5,575	11,180	3,613
15	Assistance to woodlot owners	268	268	536	50
16	Forestry projects (land acquisition, tree nurseries, crown forest management practices, reforestation, etc.)	1,527	1,527	3,066	794
17	Recreation and tourism (land acquisitions, ski resorts, camp sites, etc.)	159	159	328	143
18	Assistance to fishermen	941	941	1,882	405
19	Miscellaneous rural development projects	30	30	85	11
20	Rural development staff and training, information services	81	81	161	62
	Action projects, total	10,825	10,823	22,197	6,893

Table D-5 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost(1)	Federal ARDA Expenditures
				(Thousands of dollars)	
21	Subregional studies and area development plans				
	Studies of the lower St. Lawrence, Gaspé, Magdalen Island (mainly but not exclusively BAEQ)	2,554	2,546	5,171	2,264
	Other regional studies	236	236	471	192
	Tourism master plans for small areas	87	87	174	27
22	General economic and socio-psychological research not covered by 21	31	2	34	2
23	Studies on specific industries, products or services not covered by 21	98	98	196	45
24	Canada Land Inventory	851	-	851	670
25	Land resource use studies not covered by 21 and 24	207	202	410	177
	Research projects, total	4,063	3,171	7,307	3,376
	Grand Total	14,889	13,993	29,504	10,269

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.
Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

The most exciting aspect of Quebec's ARDA participation is on the research side and largely, though not exclusively, the kind of basic planning for which a special corporation -- the Bureau d'Aménagement de l'Est du Québec (BAEQ) -- was established in July 1963. The BAEQ was a direct response to ARDA; its specific task was not merely research but to produce, through a combination of research and local consultation, a comprehensive plan for development in a particular distressed area -- the nine eastern counties. It has been well described as an "effort to meet the needs and discover and implement the will of an underprivileged part of our population".[1/] The work of the corporation has been jointly financed by the two governments.

Interjection of the private corporation is perhaps the main difference between Quebec's approach and special area investigations in Nova Scotia, New Brunswick and Manitoba; possibly Quebec has also gone somewhat further in the involvement of communities. Contact with and participation by local people (l'animation sociale) is seen as one of the great strengths of BAEQ; merely to have made its presence felt is rightly viewed as an achievement.[2/] More than 200 local committees have engaged in the study of their problems and, through eight zonal committees, a series of observations and priorities

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1/ J. B. Bergevin, Gaspé, A Case Study, mimeographed manuscript presented at the seventeenth annual conference, The Institute of Public Administration of Canada, Winnipeg, September 10, 1965.

2/ A more tangible measure cited by Bergevin (ibid.) is the large response to up-grading courses for adults -- 235 classes in the pilot region as compared with 32 in the rest of the province.

have passed on to BAEQ at the top. These, together with the results of research and investigation, have been brought together to form the outline of "the plan". In what follows, we have attempted to pick out the highlights.[1/]

The plan, in essence, consists of a series of recommendations (more than 200 in all) for government action to (a) rationalize and improve performance in existing industries, and (b) force the emergence of new economic activities in the secondary and service sector. This will take some doing, for, while the plan accepts a certain level of out-migration, the central goal is to supply within the region a high percentage of the new jobs that are needed. It aims to supply a rate of growth that will not only absorb the unemployed and underemployed in the present labour force but also a high percentage of labour force additions -- in all, about 28,000 new jobs to 1981. Present rates of out-migration would be substantially reduced.

What the BAEQ Report may mean for ARDA is very far from clear. In a small way, its influence has been felt already -- for example, in the several projects for developing tourist sites which came in under the Second Agreement. But the decision to implement would involve an entirely new level of expenditure and also drastic revision in present approaches to farming and fishing. Agriculture (one alternative explored was that it be "completely and immediately given up") would be completely overhauled; through zoning, farming would be eliminated in the worst areas and elsewhere programmes would supply intensive management training for all farmers, pensions and relocation grants to those withdrawing, and reorganization of farm units to meet reasonable standards of productivity.

1/ The BAEQ Report, in 10 volumes, was released in July 1966. Lacking time, the present study was forced to rely on a 55-page summary (in English) published by BAEQ.

Similar fundamental readjustments are proposed for the fisheries, against which the earlier programme of improve shore facilities seems quite outdated.

Implementation of the whole plan (only parts of which have been touched on above) is seen to require the creation of a special agency within the province, and an expenditure of about $215 million spread over 10 to 15 years.

While disagreement is possible concerning the goals selected by BAEQ, there is little question that its prescriptions for primary industry in a depressed area come much closer to matching the need than anything that ARDA has had to offer to this time. We think it likely that many of the recommendations concerning agriculture would have much relevance in other parts of the province as well.

It is safe to state that the Quebec ARDA programme will undergo some changes even if the BAEQ plan remains on the shelf. The activity centred on river improvements has already abated and for the future, provincial officials have stated, such projects will be limited to areas where the farmlands are good. A major provincial interest at the present time is consolidation within the dairy industry: to replace small, subsidized milk processing plants by large, centralized low-cost plants, with the aid of government loans. Provincial officials have stated that this is likely to be the primary Quebec ARDA programme in the coming year. Since dairying is the mainstay of farm income in all but a few districts, presumably a higher percentage of the farmers may be reached than hitherto. Renewed efforts at land clearing are predicted (a $4 million project is pending) and a small programme of farm consolidation has been submitted for ARDA approval.

C. ONTARIO

The gap between funds allocated and actual implementation of programmes is particularly wide in Ontario. Measured by commitment, the province is properly viewed as a major ARDA participant; the total

of more than $15 million in the study period (see Table D-6) is more than in any province except Quebec and Saskatchewan. However, the total federal expenditure over the same period was less than that in any province except Prince Edward Island.

Why ARDA got such a very slow start in Ontario is not entirely clear but a contributing factor may be the nature of pre-ARDA agricultural programmes. The relatively modest budget for farm programmes has previously been mentioned (in 1960, less than one quarter of the $40 million programme in Quebec). Apart from the basic provincial services (extension, inspection, marketing) much of the programme centred on a system of grants: for drainage, land clearing (Northern Ontario only), farm and community ponds and -- to counties and conservation authorities -- for acquisition of land for forestry purposes.[1/] The last named was brought under ARDA shortly after its inception, though implementation was slow. Two others (farm ponds and drainage) were added within the past year.

1/ The relatively small cost of these programmes may be seen in the total expenditure over a 15-year period (1950-65).

	(Thousand dollars)
Grants to county agriculture committees	248
Northern Ontario development grants for land clearing and water supply	2,490
Agricultural drainage grants	8,425
Grants for farm ponds and community ponds	1,132
Grants to counties and conservation authorities for acquisition of sub-marginal land for forestry purposes	1,235
	13,530

The Hon. Wm. A. Stewart in a speech to the Ontario Legislature introducing estimates for 1966-67, Department of Agriculture and Food (mimeo.).

A second reason for the slow progress of ARDA in Ontario might be a certain complacency regarding the seriousness of the rural income problem, an attitude that is frequently encountered in the wealthier provinces west of Quebec.[1/] Also, the province was not interested in comprehensive rural development and, consequently, did not become engaged in planning activities such as the BAEQ in Quebec, or the Task Force in Nova Scotia. That Ontario does not have easily definable regions with concentrated rural poverty was given as the reason for not adopting an area-oriented approach. Only Manitoulin Island (population 11, 000) was declared a Rural Development Area, and there are no plans to designate any other.

As Table 5-1 shows, strong subregional concentration of rural poverty is indeed not characteristic of most of Ontario but there is a substantial amount of the dispersed variety. Even though Ontario is the wealthiest province in terms of personal income per capita, within its boundaries live approximately 20 per cent of the Canadian low-income farm families as defined in Table 2-3.

Table D-6 provides few firm guides to what ARDA has meant in Ontario because so few of the approved projects have actually been implemented. However, it will serve as a convenient framework for discussion of the main approaches.

1/ An example may be cited from People and Land in Transition, a report of the Ontario Economic Council, 1966: "In the human resource area, the much-discussed problem of what to do about people caught up in the decline of marginal agriculture is rapidly reaching its own solution through the aging of the remaining farm operators. Many of these, as part-time farmers, supplement their agricultural earning by off-farm employment. There is also some question of how many of the remainder need or want additional work. Pension and welfare payments provide a substantial assist."

The common concern which underlies a substantial portion of the action and research projects in Ontario is non-use or underutilization of land. In many cases the main motive is to salvage for some useful purpose the lands left behind by the retreat of agriculture from areas the market deemed "submarginal". This is the substance of the Northern Ontario consolidation project which aims to acquire abandoned lands, to group these into reasonably large blocks (1,500 acres) and lease them to ranchers who have sufficient capital. The hope is that assembled lands, on advantageous terms, will induce private investment in the northern beef-cattle industry.

Intensification of land use is also the motive of the ARDA drainage programme, which is an extension of an earlier provincial assistance policy, on more advantageous cost-sharing terms, to the poorer areas of Eastern Ontario. ARDA will bear two thirds of the cost of designing and constructing ditching systems and local farmers will pay the remainder; for this they can obtain loans at 4 per cent interest. It is hoped that by investing further in tile drainage and by raising higher value crops on the lands farmers will convert to a more intensive type of operation. Their willingness and financial ability to do so, however, is somewhat in doubt.

The Ontario community pasture programme was ARDA-initiated, not the continuation of an existing provincial policy.[1/] The attempt to transplant this prairie institution was strongly influenced by ARDA's high regard for the pastures and by the high proportion of land costs that the federal government was willing to bear. Although the programme represents the largest single item of federal expenditure in Table D-6, this reflects more the delays with other plans than the importance of community pastures within the ARDA framework of Ontario. The programme is no longer seen to have major development potential for Ontario.

1/ During the summer of 1965, approximately 700 cattle were pastured on the developed sections of the 7,300 acres acquired to that time. They belonged to 70 or so patrons.

Table D-6

ARDA Project Summary: Ontario

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund		Total Cost[1]	Federal ARDA Expenditures
		ARDA Funds			
		Federal	Provincial		
		(Thousands of dollars)			
11	Farm purchase, consolidation, enlargement				
	Consolidation and enlargement (province-wide)	3,600	3,600	7,200	-
	Consolidation for northern cattle ranches	233	233	465	-
12	Direct assistance to farmers				
	Drainage assistance (eastern counties)	500	500	1,500	-
	Farm pond assistance	175	175	700	-
13	Assistance to community and co-operative enterprises (community pastures)	590	427	1,017	143
14	Water and natural resource management (watershed development)	528	528	1,417	35
16	Forestry projects (land acquisitions only)	503	503	1,276	56
17	Recreation and tourism (land acquisition, minor wildlife and tourism projects)	1,092	1,092	2,247	37
19	Miscellaneous rural development projects	68	68	135	30
20	Rural development staff and training, information services	25	25	49	-
	Action projects, total	7,312	7,150	16,006	302

Table D-6 (Cont'd.)

Code	Programmes and Projects	Costs by Source of Fund			Federal ARDA Expenditures
		ARDA Funds		Total Cost(1)	
		Federal	Provincial		
		(Thousands of dollars)			
22	General economic and socio-psychological research not covered by 21	4	4	8	2
23	Studies on specific industries, products or services not covered by 21				
	Roughland pasture	58	58	117	15
	Cranberry and blueberry	38	38	76	28
24	Canada Land Inventory	661	12	674	124
25	Land resource use studies not covered by 21 and 24	28	28	56	21
26	Water research and engineering studies				
	Water resource survey	38	38	75	-
	Water management	57	57	115	48
	Engineering, surveys and studies	87	87	174	14
	Research projects, total	972	323	1,295	253
	Grand Total	8,284	7,473	17,301	554

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

According to the Ontario Department of Agriculture, community pastures are suitable for areas which have large blocks of unoccupied but potentially productive grasslands.[1/] This indicates that the programme is not considered as a means to convert submarginal cropland into grazing land, but is designed to bring additional lands into agricultural production. According to the same source, there is the added benefit that patrons may use their home farm more intensively for the production of grain and forage crops.

The above theme repeats itself in the programme of land acquisition for forestry purposes, whose aim is to find uses for land which, for all practical purposes, is now idle. The situation arises with the retreat of the agricultural frontier; much of the abandoned farm land remains in private hands and, though potentially productive forest, private investment in reforestation is seldom profitable. Conversion, therefore, fails to take place. The ARDA forestry projects are designed to rectify this "wastage" by providing assistance to local authorities in land acquisition. From most of these projects, monetary returns -- if any -- lie far in the future, although in some cases wildlife and recreational developments are also included and these offer monetary and non-monetary benefits of a more immediate nature.

Rational resource use is the principal goal of the watershed developments planned, and in a few cases undertaken, by Ontario ARDA. Projects in this category involve a number of varied engineering measures and conservation practices: the construction of dams and reservoirs, channel improvements and riverbank erosion control, planning and construction of drainage outlets, flood control, reforestation, or the preservation of scenic beauties. The River Valley Conservation Authorities, with almost 500 supporting municipalities, are the

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1/ The Minister of Agriculture's Report for the fiscal year ending March 31, 1965, Province of Ontario.

local government bodies on which the river valley improvement programmes rest in Ontario. These authorities have tax-assessing powers, but some have comprehensive long-range plans far beyond local financial means. The Second Agreement would make it possible to devote ARDA funds to multiple-purpose soil and water resource development projects which "shall be physically and economically sound and shall be approved only if found acceptable on the basis of a cost-benefit analysis". Although none of the long-range plans have been accepted on this basis as yet, Ontario ARDA would like to regard comprehensive watershed development as one of its major endeavours for the future.

The early years of ARDA in Ontario were characterized by plans which grew out of the concern over misuse and neglect of natural resources. ARDA came to the Ontario scene, not to accelerate the movement of labour out of agriculture, but to find alternate uses for the lands which became idle or neglected as a result of previous labour withdrawals. This approach is still preferred by many who see the solution of the "rural problem" essentially in resource-use rationalization. Lately, however, other views have been gaining acceptance.

The studies in Eastern Ontario conducted by the Farm Management Branch, Ontario Department of Agriculture, revealed that only 29 per cent of all farms were able to provide a minimum net cash income of about $2,000 from farming alone.[1/] The studies showed also that more than half of the disposable income of the survey families came from off-farm work and government transfer payments, and that part-time farmers were in a generally better financial position than full-time farmers, even on larger units.

1/ Henry F. Noble, An Economic Classification of Farms in Eastern Ontario, Farm Economics, Co-operatives and Statistics Branch, Ontario Department of Agriculture, Toronto, 1965.

These and similar investigations were interpreted to mean that income improvement on an overwhelming majority of Ontario farms hinges upon the enlargement of the enterprise.[1/] Increasingly in Ontario, as elsewhere in Canada, the basic trouble in the rural sector is seen to lie in the surplus of farms coupled with the underemployment of agricultural and nonagricultural labour. This recognition would appear to lie behind two new ARDA programmes, approved in the summer of 1966: manpower mobility and vocational training; farm enlargement and consolidation.

ARDA's role in manpower mobility and vocational training has not yet emerged with clarity. It seems that the ARDA committees, which in some areas exert local leadership, will help to channel rural clients into these programmes and thus establish a link between individuals and the respective government agencies. There was considerable delay in launching this programme. To clear the way, ARDA had to wait for an amendment to the federal-provincial agreement on manpower mobility and vocational training which made ARDA-recommended rural residents eligible even if they were not "unemployed". Since the Manpower Service cannot currently provide the necessary counselling for interested rural residents, ARDA relies on a network of counsellors supplied by the Ontario Department of Education. Here, as in other provinces, it would be desirable to have a clearer definition of responsibilities for rural manpower training.

The farm enlargement and consolidation programme is now Ontario ARDA's most important activity; for the period to 1970, $7.2 million have been committed on a fifty-fifty cost-sharing basis with the federal government.

1/ See E. A. Haslett in Proceedings of the Federal-Provincial Conference (Six Eastern Provinces) on Farm Enlargement and Consolidation, January 1966, Department of Forestry Publication 1152, Ottawa, Ontario.

The goal is to bring about some 200 farm consolidations annually, mainly in Eastern, South Central and Northern Ontario where most of the small farms are located and where the $100-per-acre maximum purchase price stipulated in the Agreement does not constitute a major barrier. The programme resembles its Nova Scotia predecessor in many respects but establishes a few new principles which may have important country-wide implications. For instance: the Ontario Agreement was the first to give official acceptance to the idea of a guaranteed minimum income for farm operators aged 55 and over who offer their land for sale to the government.

Selection of clients for the consolidation programme is made from applications of those who want to enlarge and those who would like to sell. The vendors' farms are to be purchased by ARDA for the "market price" and leased for a five-year period to successful enlargement applicants. The latter will be selected with the help of agricultural representatives and credit experts who assess managerial ability and over-all chances for success. After five years, renters will have the option of renewing their leases or purchasing the land at ARDA's cost plus any capital improvements made by ARDA. Sellers may take advantage of training programmes, keep their houses for a nominal rent or, if over 55 years of age, get a pension from ARDA to maintain a total income at the $1,200 annual level up to age 65.

D. THE PRAIRIE PROVINCES

That agriculture in the Prairie Provinces is not exclusively the preserve of the well-to-do has been amply demonstrated in the statistics of Chapter 2. It will be borne in mind that the ARDA definitions are designed to delineate present poverty; to distinguish the farms which have good prospects for the future, the dividing line would have to be raised well above the $3,750 gross sales (already raised from $2,500 used prior to the Second Agreement). Even if based on the narrower definition, however, the number of low-income farms is substantial.

Furthermore, on the Prairies this "hard core" category is more fully dependent on farm income than are marginal farmers in other parts of Canada.[1]

Farm poverty is most prevalent in the more northerly fringes of settlement. A recent report describes a portion of Manitoba's Northern Interlake: "vast areas of swamp, heavy bush, many stones and rocks, long cold winters and a relatively short growing season".[2] Though the case is extreme, most northern farmers do contend with an unfavourable environment and a high proportion work very small holdings. Where subsistence farming evolved with the lumbering industry, new problems developed as work in the woods was curtailed:

> "the people on these small poorly-developed farms ... are finding it necessary to depend almost entirely on the income from their farming operation".[3]

Shrinking employment in the woods has hit hard in many parts of Southeastern Manitoba and Northern Saskatchewan; the declining fishery on Lake Winnipeg has increased dependence on farming in that area.

The persistence of mixed farming on small holdings is characteristic of many parts of the park belt, an area of relatively high rural population density stretching in an arc across the three Prairie Provinces.

1/ For example: for farms with gross sales below $1,200, farm income made up one third of total family income in Saskatchewan but only 15 per cent in Nova Scotia and 5 per cent in Ontario (Table 2-2 above).

2/ The Interlake Region of Manitoba, Guidelines for Development (Draft Copy).

3/ A. Kristjanson, Senate Land Use Hearings, June 11, 1959.

These farms failed to share in any significant degree the enormous advances in productivity which stem from specialized grain production and the revolution in technology. Not untypical are the findings of the Broadview Survey (Saskatchewan) where land values reported by the largest group of farmers were $18,000 to $23,000 below the provincial average for members of farm management clubs.[1/]

In addition to the problems of special areas, farmers in all three provinces confront the problem of cost-price relationships which have generally moved to the disadvantage of agricultural producers. Many farms that were acceptable as economic units in 1951 had sunk to marginal status a decade later. In spite of the continued reduction in farm numbers, therefore, and an increase in the average size of farm, the pressure to expand size continues unabated. Speaking to the Senate Land Use Hearings in 1959, Saskatchewan's Minister of Agriculture declared:

> "Considerable size adjustments have occurred but the recent cost-price squeeze has wiped out the value of these adjustments and left us with as many or more uneconomic farms than we had ten years ago."[2/]

Essentially the same point was made in Manitoba's presentation, which concluded:

1/ Revised Summary Report of the Survey of Farmers and their Families in the Broadview Area, Economics and Statistics Branch, Saskatchewan Department of Agriculture, June 1966.

2/ Hon. I. C. Nollet, in Proceedings of the Special Committee of the Senate on Land Use in Canada, May 7, 1959, p. 200.

"It is becoming increasingly difficult for a farmer with limited resources to increase the size of his business to a sound economic unit."[1]

MANITOBA

Of immediate relevance in the Manitoba case is the broad programme of economic development initiated in 1958, whose underlying philosophy finds expression in the COMEF Report (1963).[2] The Committee found numerous reasons for the relatively slow growth rate in the fifties and held out little hope that the higher growth rate that is wanted is necessarily in store. Its conclusion: that Manitoba will continue to lag behind more prosperous parts of Canada and will see continued and higher rates of out-migration -- unless deep-rooted maladjustments within the economy can be cured. Briefly, the need is for a very large expansion in nonagricultural employment so that the large reductions which much occur within the agricultural sector can, for the most part, be absorbed within the province. The report called for broad extensions to programmes begun in the late fifties as well as large efforts within the private sector.[3]

1/ Hon. E. F. Willis, Proceedings of the Special Committee of the Senate on Land Use in Canada, June 11, 1959, p. 431.

2/ Manitoba 1962-1975, Report of the Committee on Manitoba's Economic Future, Winnipeg, 1963.

3/ Programmes instituted or greatly expanded in the period 1958 to 1961 include: a programme of regional development whose aim is to bring industry to the smaller cities and towns; economic base studies to determine resource and industrial potential; soil and land-use survey in the problem areas and formation of local committees to work with provincial staff in formulating development plans; a water development programme; agricultural credit; crop insurance, courses in farm management for operating farmers and an extended system of bursaries to the farm school and degree courses; larger school units in the problem areas and expanded facilities for technical and vocational training.

As would be expected, this background has had enormous influence on the ARDA programme in Manitoba. In the words of a provincial publication:

> "The ARDA legislation and arrangements provide assistance to the Province to carry forward several of these provincial objectives outlined by COMEF....
>
> COMEF provides guidelines to comprehensive provincial development programmes. ARDA provides assistance to carry forward selected programmes throughout the Province and offers assistance to develop comprehensive programmes ... in selected regions of the Province."[1/]

When the First ARDA Agreement was signed (December 1962) land-use survey had proceeded far enough to permit selection of areas to be removed from private ownership under the Alternate Land Use Section; a backlog of projects in the water development programme was on hand. In the Southeast, some experience had accumulated in the techniques of rural development. There seems also to have developed a deep appreciation of the part played by research.

Table D-7 presents a summary statement of the ARDA programme to July 31, 1966. To the reader who has made his way through the several pounds of the COMEF Report, the ARDA commitment comes as something of an anticlimax. The total federal commitment of just under $5 million (about $1.4 million per year) represents less than 1 per cent of the provincial budget[2/] and actual expenditure has been about half of that.

The largest single item under Manitoba's ARDA programme consists of the drainage and flood control projects (roughly 50 per cent of the total -- the maximum

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1/ The ARDA Programme in Manitoba 1962-1966, Manitoba Department of Agriculture and Conservation, p. 4.

2/ Ibid., p. 4.

Table D-7

ARDA Project Summary: Manitoba

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund			Federal ARDA Expenditures
		ARDA Funds		Total Cost(1)	
		Federal	Provincial		
		(Thousands of dollars)			
12	Direct assistance to farmers				
	Assistance for land clearing	124	124	760	12
	Subsidized forage seed	79	159	476	58
	Farm management extension	6	6	11	-
14	Water and natural resource management (drainage and flood control works, water storage)	2,276	2,282	4,939	1,378
16	Forestry projects				
	Land purchase for forestry	48	48	95	28
17	Recreation and tourism				
	Land purchase for recreation or wildlife uses	810	810	1,619	521
18	Assistance to fishermen				
	Fisheries extension programme	19	19	39	5
19	Miscellaneous rural development projects	74	74	149	13
20	Rural development staff and training, information services	294	129	423	162
	Action projects, total	3,729	3,650	8,511	2,178

Table D-7 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost[1]	Federal ARDA Expenditures
				(Thousands of dollars)	
21	Subregional studies and area development plans	571	118	693	283
22	General economic and socio-psychological research not covered by 21	123	23	145	18
23	Studies on specific industries, products or services not covered by 21	138	138	301	50
24	Canada Land Inventory	135	-	135	31
25	Land resource use studies not covered by 21 and 24	104	104	208	38
26	Water research and engineering studies	192	192	390	35
	Research projects, total	1,263	575	1,873	455
	Grand Total	4,992	4,225	10,384	2,633

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

proportion allowed under the Agreement). The work is part of a long-term development programme and, since requests come in from the local level, is clearly a service that farmers and rural communities wish to have. The demand for such projects is said to be well beyond the combined ability of the province and of PFRA to supply. Represented in Table D-7 are the costs of reconstructing three floodways in the Red River Valley, of a dam and dyking system in Western Manitoba, and of several drainage works in the Interlake Region. The first of these accounts for the larger portion of the cost (just under $3 million in a total of $4.5 million) and would likely claim the highest ratio of benefits because the land affected is classified as first-class arable. Reconstruction of drainage in the Southern Interlake ($600, 000) is also centred on good land. In the Northern Interlake, where some of the land is quite poor, the decision to proceed with drainage probably stemmed from the desire to get some projects under way in the rural development area.

The Alternate Land Use Section has been used chiefly in buying land, most of it for parks or wildlife habitat. In a small way, the programme may be directed to the problem of farmers in a hopeless situation -- as in the Southeast, where farmland was bought for transfer to provincial forest[1/] -- but by and large the main purpose appears to be the assembly of land for other purposes. There has been very little buying in the

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1/ The objective expressed by the rural development officer at the Senate Land Use Hearings:

> "What I am most concerned about in these areas is that where this land has historically indicated that it is not capable of providing a livelihood from agriculture, no one else should make the same mistake which two or three generations have made already."

Proceedings of the Special Committee of the Senate on Land Use in Canada, March 15, 1962, p. 39.

Northern Interlake, where much of the land is plainly submarginal, but nearly a million dollars were spent on land purchase for a park on the outskirts of Winnipeg -- an area where few sellers were bonafide farmers. The whole programme is best taken as an exercise in resource management whose ultimate goals are better recreation facilities, recreation employment and a larger volume of tourist spending.

There is one programme which bears directly on the problem of underdeveloped farm systems in the Interlake Region: assistance for clearing and breaking. The programme offers a small subsidy, technical services, and a substantial reduction in the contractor's rate. Formerly $50 an acre, the price has been reduced to $25 to groups of farmers in a district contracting for clearing. The subsidy is $4 per acre. On 50 acres, then, the farmer will still have to raise about $1,000, but for a job that would have cost him $2,500 in the absence of the programme. The total cost to the government is relatively small -- roughly $140,000; some 20,000 acres have been cleared, with 200 to 300 farmers participating, and it is thought that an equal number have been encouraged to go ahead on their own.

With the Interlake Region, Manitoba was among the first provinces to designate a Rural Development Area, and it is the only province west of Quebec to engage in comprehensive rural development. A lengthy gestation period is part of the rural development process as defined in the ARDA legislation. To produce a comprehensive plan -- which can recommend major programmes for the area concerned -- there must first be resource inventory and involvement of communities; there can be assistance programmes to develop local resources and certain larger works, but these are preliminary to development of the plan, not implementation of it.

The special federal contribution (i.e., 100 per cent cost-sharing) for the Interlake Region has been largely for research, though it has also helped to defray the cost

of provincial officials who explain ARDA at the local level and involve communities in the task of self-appraisal.[1] By no means, however, has the Interlake Region been exclusively a federal concern. For several research projects and most of the action programmes, the cost has been shared by the province. In addition, though precise figures are not available, it is known that the Interlake Region has been the recipient of substantially increased provincial expenditures over the past few years, notably on highways and education. This points to one of the difficulties in the early ARDA years: a province embarking on comprehensive area development could look to ARDA for only a small portion of the cost.

Probably the most important result of the past three years of ARDA is that the province now has a comprehensive development plan for the Interlake Region. Implementation would involve major federal participation, presumably on the scale envisaged for Northeastern New Brunswick. The plan itself has not been released for public consideration so that only very general features would be appropriate for discussion.[2]

1/ Research includes: soil survey and land utilization study, general economic survey; ranch budgetary analysis (to define an economic unit); feasibility studies for particular industries; a study of migration patterns; a youth study centred on occupational aspirations and reasons for drop-out; a study of the leadership structure in fishing communities, and other ethnic group values (receptiveness to adjustment and change).

2/ On May 16, 1967 -- shortly before publication of this study -- the Interlake rural development programme was officially announced. Altogether, $85 million will be spent over an unspecified period; the federal government contributing $50 million. As expected, expenditures on educational facilities, on manpower training and mobility are the dominant items, together accounting for almost two thirds of the cost. Agriculture will get a sixth of the total for a land-purchasing programme, drainage and land development assistance. The remaining amount goes to the fisheries, road building, recreation and administration.

Like the plan for Northeastern New Brunswick, a main emphasis is placed on education, training and manpower mobility; there are also major readjustments proposed for the primary sector. The latter includes, on the one hand, those in farming or fishing who could be assisted to improve their incomes in their present occupation; the balance (many of whom are Indian or Metis) would be helped to leave the primary sector through planned programmes of contact, adult education, individual case work, training and financial assistance. In this approach, in which assistance to farmers and fishermen will be combined with planned reductions in the labour force in both industries, it is evident that ARDA thinking has moved some distance from the resource-improvement programmes of the early years.

Solutions to the problem of surplus labour will vary with individual circumstances, as indicated above. As it looks now, the hope is that the larger number can be reabsorbed within the regional economy -- the result of higher levels of education and training and of new employment opportunities to be created. Development measures accommodated under the proposed rural development agreement (chiefly roads and recreation projects) appear to be primarily directed to the tourist industry, but the larger plan looks also to the stimulus which may be supplied by other funds and agencies. Chief of these would be the Manitoba Development Fund and the federal ADA programme. Reabsorption does pose greater difficulty than in Northeastern New Brunswick since the Interlake has not the same immediate prospects for new industry; it may be that the province is putting undue emphasis on "development". At the same time, while one may regret the absence of a firmer commitment to accelerated out-migration, one may reasonably expect that education, health and welfare and mobility programmes will tend to work in this direction if growth in the region proves insufficient.

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SASKATCHEWAN

As a result of the extensive investigations of the Royal Commission on Agriculture and Rural Life of the mid-fifties, Saskatchewan was perhaps better informed than most provinces about its rural sector. Yet, there were few new policies forthcoming. By and large, the programmes which went into ARDA reflect approaches of the preceding 20 years; chief of these has been the concern for improved land use.

A continuing programme of land classification (which dates back to the thirties) and a modest programme of land purchase in the fifties are both direct antecedents to ARDA. The latter, whose aims were the closing out of farms on poor land, control of land use and provision of community grazing, is strongly reminiscent of the early days of PFRA. But there is this difference: whereas the large-scale transfers of the thirties included a high percentage of land either owned by the Crown or in municipal hands, the programme of the fifties was more specifically addressed to privately owned lands.[1/]

Provincial pastures made their appearance in the early fifties -- largely, it appears, in response to the demand for community grazing facilities.[2/] Most were

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1/ In the official view, market forces do not always accomplish the desired end because the farmer needs a cash payment in order to move and his neighbours are more likely to offer terms. The government has paid grants to cover moving expenses, and in some cases has paid more than actual value of the farm in order to assist the re-establishment of families (Saskatchewan Department of Agriculture presentation to the Senate Committee on Land Use, 1959, p. 202). Annual expenditures on land purchase have ranged between $100 and $200, 000 per year (ibid., Appendix C).

2/ There are about 10 older pastures which came under government ownership for one reason or another, but the policy of establishing pastures dates from 1949.

located in areas which could not be developed by PFRA (north of the PFRA boundary, or available acreage too small to meet PFRA requirements) and where development costs were judged too high for a grazing co-op to undertake on its own. Once established as a provincial service, the demand grew and by the early sixties the province was assessing the merits of a number of new pastures a year. The early sixties are also marked by a sharp upsurge in interest at the provincial government level as part of the general concern for the apparent shortage of grazing land. Previous experience had shown that the amount of land in grazing was quite unresponsive to such methods as exhortations to farmers and subsidized distribution of forage seed, yet failure to increase acreage could be seen as a main obstacle to growth in Saskatchewan's livestock industry. With favourable market forecasts for beef and some hopes for expansion in the processing industry,[1/] the province looked to its pasture system to produce new grazing land from marginal and submarginal land in crops.

With the advent of ARDA in 1962, Saskatchewan had 26 provincial pastures operating and another 18 either scheduled for development or under consideration.

1/ Several recent studies have shown that the small size of Saskatchewan's packing industry is very closely related to deficiencies of supply. See R. C. Nicholson, Livestock, Meat and Farmers, Department of Agricultural Economics, University of Saskatchewan, 1965; Harold Bronson, The Developing Structure of the Saskatchewan Meat Packing Industry, Department of Economics and Political Science, University of Saskatchewan, 1965; Helen Buckley, Manufacturing Industry in Saskatchewan, Centre for Community Studies, Saskatoon, 1965. The fact that locational factors in the packing industry reveal a strong shift in favour of supply areas suggests good chances for expanding the industry in Saskatchewan if supply can be improved.

In large measure, this latter factor explains why the total value of Saskatchewan projects approved under the First Agreement exceeded that of any province except Quebec: Saskatchewan had, in effect, a reserve shelf of works.

Turning to Table D-8, we find more than $10 million allocated to the community pasture programme; a high percentage of this came under the First Agreement. The figures include a few projects where assistance went to a grazing co-op, with local members paying a portion of the cost; there are also a few forage projects (shown separately in the Table) which differ because the land acquired and developed is made available to individual farmers through leasing. For the bulk of the expenditure, however, the focus has been on provincial pastures -- some small additions to existing facilities, some major extensions or improvements, and some wholly new pastures. In the provincial pasture system, 475,000 acres were to be added or improved -- a somewhat larger total than the 375,000 acres that the province was operating in 1962.

Drainage works and watershed improvement have been the second major outlet for ARDA funds in Saskatchewan (see Table D-8); this programme also dates back some years. By and large, provincial policy has been to leave the initiative to local users' associations, with government supplying technical services and grants in aid of construction; the chief exception would be the heavy expenditure on construction of drainage for northern settlement projects. Under the general policy, several hundred projects received preliminary investigation during the mid-fifties when flooding assumed serious proportions through much of the North and East. Most of these were not built, apparently because farmers found the cost too high. Since ARDA drainage projects are mostly in the same general area, it is reasonable to infer that in this programme too a reserve shelf of works proved helpful in preparing quick submissions for

ARDA approval. The effect of ARDA has been to accelerate an on-going programme and, probably, to extend it to areas where cost has seemed prohibitive.[1/]

Programmes classified as "direct assistance to farmers" are not a large item in Table D-8 and two of the three are strongly conservation-oriented (assistance for shelter-belt plantings, weed and erosion control). Neither are new activities for the Saskatchewan Department of Agriculture. Under the Second Agreement, ARDA cost-sharing has also been extended to a programme of assisting farmers to install domestic water supply systems. The latter programme, which has been operating since 1960, has demonstrated important savings through bulk purchase of materials.[2/]

1/ While local authorities must bear a portion of the cost, the portion is not large enough to ensure that benefits to users in fact exceed the total cost. Provincial assistance is provided as follows: 90 per cent of cost for channel improvement or multipurpose projects; 75 per cent for flood control; 50 per cent for drainage. In the case of ARDA projects, the province receives 50 per cent of the shareable cost from the federal government. For the group as a whole, local contributions cover approximately 15 per cent of the total ARDA cost.

2/ Enough, in fact, to pay for grants and technical services to farmers and all administrative expenses. From the Report of the Family Farm Improvement Branch for 1964-65 (five year totals);

Cost reduction on materials		$2.6 million
Programme costs		
Technical and administrative services	1.2 million	
Grants to farmers	1.2 million	2.4 million

The farm benefit is defined as the savings on materials, the grants and free services, plus the results of research -- all told, about $4.5 million over the five-year period.

Table D-8

ARDA Project Summary: Saskatchewan

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost[1]	Federal ARDA Expenditures
				(Thousands of dollars)	
12	Direct assistance to farmers				
	Shelter-belt plantings	41	70	111	30
	Grants to farmers installing water systems	114	114	1,520	86
	For soil conservation	7	7	30	-
13	Assistance to community and co-operative enterprises				
	Community pastures	5,779	4,687	10,745	3,664
	Fodder projects	355	250	605	182
14	Water management and development (drainage works and flood control)	830	828	1,960	596
17	Recreation and tourism				
	Purchase of land	157	259	453	108
	Recreation and tourist programme -- rural development areas	281	281	562	262
19	Miscellaneous rural development projects	45	45	91	28
20	Rural development staff training and information	54	54	108	30
	Action projects, total	7,663	6,597	16,182	4,987

Table D-8 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund			Federal ARDA Expenditures
		ARDA Funds		Total Cost(1)	
		Federal	Provincial		
		(Thousands of dollars)			
21	Subregional studies and area development plans				
	Community studies	93	93	186	58
	Census Division 16	267	-	267	36
	Saskatchewan river delta	87	87	175	54
22	General economic and socio-psychological research not covered by 21	75	75	151	58
23	Studies on specific industries, products or services not covered by 21	50	50	100	14
24	Canada Land Inventory	591	-	591	206
25	Land resource use studies not covered by 21 and 24	69	69	138	57
26	Water research and engineering studies				
	Groundwater studies	506	506	1,028	233
	Surface water studies	179	179	358	39
	Other	51	51	102	4
	Research projects, total	1,969	1,110	3,095	758
	Grand Total	9,632	7,707	19,277	5,745

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

The province has also used ARDA funds in the purchase of land for recreation and wildlife uses.

The figures suggest only a minor commitment to the rural development approach. Three very small areas were designated under the First Agreement (Torch River, Meadow Lake and Broadview) where the Agricultural Representative Branch had previously instituted a rural development programme. With varying degrees of success, community councils had been formed, meetings held, local views expressed and development possibilities discussed. To this, ARDA has added certain research projects and helped, for a time at least, to sustain the interchange between local leaders and provincial agency personnel. Probably, it has steered some water projects and community pastures to the areas concerned. (Recommendations from Torch River and Meadow Lake both centred on projects to increase grazing and fodder production.) The Broadview Council, which appears to be the only one still active, is reported to have some submissions concerning tourist development; it also claims some attention to the problem of Treaty Indians, though again it would be difficult to point to tangible results.

Under the Second ARDA Agreement, the province has declared the whole of the park belt and north to the Churchill River to be a Rural Development Area, any part of which may qualify for special programmes. Apart from staff training, and a proposal for incentive grants to speed clearing and breaking (also an on-going programme), no specific plans have as yet emerged. There is a possibility that Saskatchewan may consider the establishment of a Special Rural Development Area in some northern region but with a programme much more limited than Manitoba's Interlake plan.

A more substantial commitment is evidenced for research. Taking all research projects together, the funds allocated fall not far short of the total for all action projects excluding the pastures and are substantially

above the research allotment in Manitoba. Choice of projects reveals important differences as well. Manitoba, with a smaller budget, tended to concentrate on a problem region; Saskatchewan has given much higher priority to the Canada Land Inventory and to similar or related investigations of a basic resource nature. On completion, the province will have not merely a detailed system of land classification but also, for the agricultural area, measures which relate farm size and productivity coefficients on a rural municipality basis.

There is also the special case of Census Division 16, a pilot project in area research[1/] in which the whole cost was met by the federal government. Unlike the 100 per cent federal research in Manitoba, these investigations appear to lack a ready frame of reference in provincial planning.

The future course of ARDA in Saskatchewan would be difficult to predict. The pasture programme is now well past the peak and expected to diminish, but other farm programmes that ARDA offers (farm consolidation, for example), appear to make little appeal. At the present time, the chief interest centres on what the federal government may offer in training and mobility programmes. The relatively short duration of the ARDA agreements is seen as a major stumbling block to a province embarking on training and mobility schemes.

ALBERTA

As with Saskatchewan, Alberta's provincial farm programme has been strongly land-oriented; indeed, since mistakes in the settlement pattern were earlier manifest, it was Alberta which pioneered with "special areas" legislation, a decade or more before PFRA. Even when federal help became available, the province chose to retain its own system of pastures -- essentially,

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1/ Most of the research was conducted by the Canadian Centre for Community Studies in Saskatoon.

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the lease of Crown lands on a long-term basis to local grazing associations. Renewed attention to the problems of marginal areas was evidenced from the mid-fifties on. For example, considerable efforts were directed to the thinning of farm population in the Hanna area (the government encouraging farmers to move out and also purchasing the land), apparently with good results.[1/] Farms have been purchased also in northern areas where experience has revealed more recent mistakes in settlement. Today, with land classification and zoning well established, settlers can purchase land only in areas designated for agriculture.

In earlier years, an important aspect of provincial policy was the creation of new land frontiers -- in the North and in the irrigation districts. Whether the latter are to be further extended remains an open question, but certainly the problems of the older districts -- deterioration of works and increasing salinity of the land -- are matters of grave concern to the province at the present time.

While Alberta's interest has not been confined to land-use and water programme, this was very clearly the kind of national programme that the province most wanted, according to its Brief to the Senate Land Use Hearings.[2/] As to the "small farm" problem (the extent and proportions of which were admitted to be "considerable") the Brief contained a number of

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1/ For farmers remaining in the district, large areas of grazing land became available and the average size of farm increased substantially; it may be, as the Minister of Agriculture reported in 1959, that not many uneconomic units remain. (Proceedings of the Special Committee of the Senate on Land Use in Canada, May 21, 1959.)

2/ Proceedings of the Special Committee of the Senate on Land Use in Canada, op. cit. The list of specific recommendations is strikingly close to what eventually materialized with ARDA.

suggestions, but very little enthusiasm. For many parts of the province, the need for government intervention was seen as minimal. Like Saskatchewan, Alberta was chiefly concerned with the park belt and northern areas, [1/] while the problem of undercapitalized farms in the irrigation districts appeared to constitute a third area of special need.

The usual summary of ARDA activities will be found in Table D-9 which covers all projects approved to July 31, 1966. In terms of government funds allocated, Alberta placed very slightly above Manitoba, but below Saskatchewan, and actual expenditure is less than that of either. Well over half the cost shown in the Table is for projects only recently approved; under the First Agreement, the province and federal government agreed to a programme of approximately $4 1/2 million or abour $1 1/2 million per year over a three-year period.

The strong conservation interest is at once apparent. What has been classified as "direct assistance to farmers" consists essentially of soil conservation measures: assistance to plant trees or to reclaim land through seeding forage, combatting weeds or soil salinity. As one example, under the land reclamation project, the farmer may get up to $250 per year for a three-year period for weed eradication; this has been compared to the estimated $1, 000 per farm which is lost each year due to weed infestation. Half the cost is

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1/ In the Light Brown Soil Zone, the Brief argues, the main adjustments have taken place; in the Dark Brown Soil Zone, where a considerable number of small farms remain, the expectation is that "the elimination of small farm units in this part of the Province will be gradual and accomplished without distress", p. 282. A more serious view was taken of the park belt, where a 1958 survey reported average labour earnings of $594 for the quarter-section farm, and the North, where a 1953 survey showed that farms below average size did not earn enough to cover living expenses.

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borne by the municipalities, the other half is shared by the province and the federal government.[1/]

Much else in the Alberta programme is similarly directed to basic resource improvement: drainage works, land-use studies, irrigation studies, groundwater explorations, and the Canada Land Inventory. It is interesting to note the high percentage of the total that falls under the heading "research" (more than one third in Table D-9); the proportion greatly exceeds that of the other Prairie Provinces. A major reason lies with the problems of the irrigated lands and the uncertainty which surrounds the future of irrigation in Alberta. In this respect, ARDA has been used not to push forward with new schemes but, mainly, for engineering studies, soil and drainage surveys, market appraisal and -- most important -- an economic appraisal which seeks to establish what irrigation means to Alberta. On the latter, it is said, hinges the future of the provincial policy in the irrigation field. Pending results, the government has refused to expand its services to irrigation districts or to allow the addition of large blocks of land. While exceptions are made in cases of on-going programmes and those in which drainage problems are holding up municipal road-building programmes, it can be seen why, unlike British Columbia, the province has made but slight use of ARDA for actual physical construction.

A third main interest in Alberta has been to increase the supply of grazing land. The degree of commitment has not been as great as in Saskatchewan, but the pasture programme does involve the largest allotment of any action project and it is the largest single item of expenditure to date. Some of the projects were new pastures, involving the acquisition of land; lately, however, the emphasis has

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[1/] It should be noted that cost data in the Table cover a period of years. The land reclamation project includes $100,000 under the First Agreement, and the balance ($650,000) is to be spent over a five-year period, or $130,000 per year. The shelter-belt programme, which is to be spread over four years, involves a slightly smaller amount.

fallen chiefly on improvements -- land clearing, cultivation, seeding and spraying -- to increase carrying capacity on existing grazing reserves. The future pasture programme will involve a smaller expenditure ($235, 000 over a four-year period) but will probably reach a much larger number of the 77 grazing associations. Allowing for a 10-year period of range development, the aim is to increase cattle-carrying capacity by 25 per cent.

In addition to farms purchased under the community pasture programme, ARDA has also been used to buy out uneconomic units in the forest fringe; this land will revert to forest uses and the projects have been so classified in Table D-9.

Finally, there is rural development -- not an area of major expenditure in Alberta but one to which at least partial commitment has been made. The designated area -- Census Division 14, north and west of Edmonton -- is called "a pilot project in comprehensive rural development"[1/] and activities of the usual kind have prevailed. "Local people in committees have reviewed their circumstances and studied areas of potential development";[2/] they have been assisted by the Farm Economics Branch of the Department of Agriculture which undertook a resource inventory and an analysis of potential, established a technical panel to assist local groups and appointed a Regional Resource Co-ordinator, who is resident in the area. There is also a resident Rural Development Home Economist. Apart from the research, very little of the programme cost has been shared under ARDA, though participation is expected to increase.

A main element in planning to date is for the development of the tourist industry and there is no doubt that this is what the local committees want. In addition, the province

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1/ Resources for Rural Development in Census Division 14, Alberta Department of Agriculture, July 1966.

2/ Ibid.

Table D-9

ARDA Project Summary: Alberta

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost[1]	Federal ARDA Expenditures
				(Thousands of dollars)	
12	Direct assistance to farmers				
	Subsidized forage seed	200	400	1,200	23
	Weed and erosion control	375	375	1,500	50
	Shelter-belt plantings	245	245	634	-
13	Assistance to community and co-operative enterprises				
	Community pastures	1,151	868	2,297	397
14	Water management and development (mainly drainage works and flood control)	352	352	1,093	205
16	Forestry projects				
	Land purchase for forestry (includes farmland)	347	347	693	21
19	Miscellaneous development projects	38	38	100	-
20	Rural development staff training and information	365	365	730	1
	Action projects, total	3,072	2,988	8,247	697

Table D-9 (Cont'd.)

Code	Programmes and Projects	Cost by Source of Fund: ARDA Funds Federal	ARDA Funds Provincial	Total Cost[1]	Federal ARDA Expenditures
				(Thousands of dollars)	
21	Subregional studies and area development plan (in rural development areas)	44	44	101	22
22	General economic, and socio-psychological research not covered by 21	24	24	47	2
23	Studies on specific industries, products or services not covered by 21	44	44	88	5
24	Canada Land Inventory	581	-	581	168
25	Land resource use studies not covered by 21 and 24	16	16	32	7
26	Water research and engineering studies				
	Irrigation systems, engineering and economic studies	1,071	1,332	3,187	342
	Groundwater supplies, exploration and analysis	162	162	364	49
	Watershed research	145	145	291	1
	Research projects, total	2,087	1,767	4,693	597
	Grand Total	5,160	4,756	12,940	1,294

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

has prepared and published an extensive list of guidelines "for consideration in preparation of an over-all economic and social development programme".[1] These may form the basis of a provincial request for obtaining further federal financing from the Fund for Rural Economic Development.

Unlike the Interlake in Manitoba, Alberta's Census Division 14 has already a major manufacturing industry (the pulp mill at Hinton) and an impressive potential for further development in forestry; it has some possibilities for mining and more certainly for tourism. The problem, then, is very clearly centred on the farm sector which reveals the usual weaknesses of pioneer agriculture but -- in sharp contrast to most low-income farm communities in the Prairie Provinces -- has also a considerable volume of off-farm work available and the promise of more to come. The main problem, it would appear, lies in the lack of education and training which keeps the farm population from moving into steady jobs in urban industry. Reportedly, the pulp mill had to recruit a high percentage of its work force from outside.

It should perhaps be added that the northeastern Census Division (C.D. 12) has also had a base study, and further investigations have been launched concerning the inland fisheries. (The problems of this area appear to be more serious than those of Census Division 14.) Finally, although it is a small project, it seems worth mentioning a farm survey recently approved for a low-income pocket in the Peace River Region. This project originated as a self-help venture by the farmers themselves; the fact that the resources of ARDA can be called upon to assist local groups is an interesting feature of the federal legislation.

E. BRITISH COLUMBIA

More than any other province, British Columbia has had a single, central purpose for its ARDA funds.

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[1] Resources for Rural Development in Census Division 14, op. cit.

Of $5.5 million approved under the First Agreement, $4.7 million was for the rehabilitation of irrigation works; the total of approved projects now stands at $11.5 million and roughly $9 million represents the irrigation projects.

The reasons for this singular concentration can only be inferred from secondary sources, but some light is shed by the provincial submission to the Senate Land Use Hearings in 1959. Explaining the numerous handicaps agriculture confronts in British Columbia (difficult terrain, high transport costs, heavy charges for clearing and draining, for dyking of floodlands and for irrigation in arid areas), particular stress was placed on its failure to be competitive in local markets. This was attributed in part to the rapid development of subsidized irrigation farming in the neighbouring state of Washington.

> "Cheap electric power from the federally financed and constructed Grand Coulee power plant is available for pumping irrigation water. Reclamation of the land, construction of irrigation canals and facilities have also been carried out by the United States Government and acreages sold to settlers on terms that make it possible to establish without the heavy annual costs which have hampered and in some cases bankrupted irrigation enterprises in British Columbia.
>
> ... This is a large development, close to the urban centres of British Columbia and a strong competition for agricultural produce markets there.
>
> ... It is evident the Government of the United States recognizes the heavy costs often met in reclaiming land for agriculture and have taken steps to ensure a reasonable possibility of success for such enterprises." 1/

1/ Proceedings of the Special Committee of the Senate on Land Use in Canada, May 28, 1959, Appendix C, Brief from the Department of Agriculture, British Columbia.

It is also evident that the PFRA irrigation in Alberta is the source of some hard feelings and, allegedly, of some further diminution in markets. Strong competition by Alberta crops, particularly vegetables, is said to be "mainly possible because of the advantageous financing enjoyed by the farmers involved and the initial lower cost of land and water". The ARDA programme is here forecast:

> "It is apparent if British Columbia growers are to compete successfully, even in our own province, with produce from projects such as those mentioned, some form of federal assistance must be provided in the development of new land and in the rehabilitation of existing reclamation systems. Joint Federal and Provincial assistance in the planning and financing of projects in British Columbia appears highly desirable. Much could be accomplished to place present and future agriculture enterprises in the Province on a solid footing by the use of long term financing with low interest rates."

Other forms of aid suggested at this time include higher tariffs, additional subsidies on transport of feed grains and federal aid towards the rehabilitation of dyking and drainage systems, as well as irrigation.

Not all problems, of course, are unique. Like other regions, British Columbia confronts the problem of farms made marginal by rising costs of inputs and by higher aspirations. The small holdings are particularly hard hit: such factors as poor soils, unfavourable topography and inadequate drainage are widespread; original capital costs have been relatively high and, in many areas, high land costs make it exceedingly difficult to seek a solution through expansion. Meanwhile, the loss of farm labour to higher-wage industries has imposed the cost of mechanization on very small acreages. The latter, according to a Royal Commission inquiry, is a major reason why many of the full-time fruit growers who were able to secure a good living in the forties were operating uneconomic units by the late fifties.[1/]

1/ Report of the Royal Commission on the Tree-Fruit Industry of British Columbia (Dean E. D. MacPhee).

In the view of the Department of Agriculture, the problem of inadequate income on full-time farms extends across the whole province, though it is more acute in some districts than in others. Estimates made in 1959 show 25 to 75 per cent of the full-time farms in all regions to be low-income.[1/]

Having mentioned earlier the desire for further subsidies, it is only fair to add that the Department has been by no means unaware of the urgent need for improvements within B.C. agriculture. Improved management was seen as the single, most important factor, and the farm management programme, recently launched, was to be rapidly expanded. The possibility for meeting capital needs through government loans was seen as wholly dependent on supervisory services and limited to farmers with proven management ability.[2/]

Finally, it is not irrelevant to the ARDA programme to note the limits to the government's responsibility which had been emphasized by the MacPhee Commission and reiterated in the government's Brief to the Senate Land Use Hearings:

> "In our free society, all that can be done is to state as pointedly and as clearly as possible the accepted facts and the prevailing attitudes of those engaged in a particular way of life. If the Commissioner should find that acreages under 7 1/2 or 10 acres, or any other size, in any or all of the areas cannot be depended on

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1/ Proceedings of the Special Committee of the Senate on Land Use in Canada, op. cit., Appendix C.

2/ Perhaps of interest: "In many instances it can be safely said that the small farmer is not so much short of credit but rather that his business is not credit-worthy. What is needed in these cases is the transformation of the enterprise so that it provides a real base on which additional credit can be usefully employed" (ibid., p. 412).

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> to produce a return sufficient for the growth and education of a family, and for the maintenance of a reasonable standard of living, then the social implications, and the implications for the individual farmer, must be that if he operates a lesser size of unit, he is freely accepting a lower standard of living or will become a part-time horticulturist. Should he accept the role deliberately of operating, knowingly, on an acreage that cannot provide a standard of living he wishes, then he cannot expect society to feel responsibility for his plight."

Turning to the ARDA programme, Table D-10 details a shareable cost which, at roughly $12 million, is somewhat higher than in Alberta or Manitoba; with the larger local contributions in British Columbia, the total cost is substantially higher. Very little of the federal commitment is reported as spent.

The main reason for the large excess in commitments is that the larger portion of the irrigation programme came in under the Second Agreement. The First Agreement covered 16 separate projects, all directed to existing works and most of them relatively small scale (nine fall in the cost range $10,000 to $100,000 and another five cost less than $300,000; the two larger projects account for something over $3 million between them). In some cases, where only minor improvements are involved, the cost to the senior governments works out as low as $8 per acre; others have been in the $30 to $40 per acre range and the largest undertakings involve costs of $300 to $400 per acre (not including the local share). In many cases, improved water supply serves domestic as well as irrigation purposes, hence acreage costs are not entirely appropriate. The foregoing serves chiefly to indicate the diversity of scope and scale.

We have no information concerning anticipated benefits. In all cases, the cost has been split three ways:

1/ Ibid., p. 414.

federal government, province and users each assuming one third. Beyond irrigation, there are four small water projects using ARDA funds. Drainage works reflect the larger portion of the cost, and again the commitment is largely under the Second Agreement.

With the addition of community pastures, the list of action programmes is complete. The pastures, it is interesting to note, are specifically aimed at the problem of small acreage. All nine are located in the Peace River country where small farms are greatly handicapped in crop production by such factors as early frost and distance from markets, while even larger farms experience difficulty in meeting both grazing and feed requirements of cattle. A recent survey states:

> "These pastures allow farmers to produce more cash crops on their land while at the same time allowing them to increase their beef stock." 1/

The programme will add to carrying capacity, but it has also encountered problems. As reported in the survey cited, the distances involved are such that the cost of transporting cattle to the pastures is too high for some ranchers; these claim to be adversely affected by the ARDA programme. The fact that to the time of writing, no pastures have been submitted under the Second Agreement, suggests that the programme is not likely to be further pursued in British Columbia.

Research interests have centred chiefly on the basic work of land inventory and classification. It may be noted that, in a research programme of $1.3 million, the provincial contribution has been less than $200,000. The province has shared the cost of a rural-incomes survey and some air photography, but most of the provincial expenditure has to do with water resources: groundwater aquifers, drainage appraisal, and irrigation.

1/ The Peace River-Laird Region, An Economic Survey, March 1966, Department of Industrial Development, Trade and Commerce, Victoria, B.C.

Table D-10

ARDA Project Summary: British Columbia

(To July 31, 1966)

Code	Programmes and Projects	Cost by Source of Fund			Federal ARDA Expenditures
		ARDA Funds		Total Cost[1]	
		Federal	Provincial		
		(Thousands of dollars)			
12	Direct assistance to farmers	20	20	61	20
13	Assistance to community and co-operative enterprises	122	120	242	121
14	Water management and development	4,810	4,815	14,445	536
	Water storage	112	112	323	16
	Action projects, total	5,064	5,068	15,071	693
22	General economic and socio-psychological research not covered by 21	25	25	49	-
24	Canada Land Inventory	1,026	20	1,046	360
26	Water research and engineering studies--				
	Groundwater supplies, exploration	49	49	98	11
	Irrigation systems, engineering or economic studies	35	35	70	15
	Other	50	50	100	31
	Research projects, total	1,185	179	1,363	418
	Grand Total	6,249	5,246	16,434	1,111

(1) Including local contributions.

Note: All ARDA costs exclude administration. Figures may not add to totals due to rounding.

Source: Data are based on tabulations received from the Department of Forestry and Rural Development, Ottawa.

British Columbia is the only province for whom the Alternate Land Use section had little appeal. Beyond the relatively small acreage acquired for community pastures there has been no land purchased under ARDA. The province is also the only one from which the Rural Development provisions elicited no response at all. In partial explanation, we would recall the view expressed at the Senate Land Use Hearings: that the problem farms are found in all parts of the province, hence, "extremely difficult to say which region of British Columbia requires special investigation or special treatment".[1/] More basically, we suspect, the failure to seek out problem areas reflects a rather different view of ARDA's role. On the one hand, there appears to be no firm conviction that "poor" farmers need assistance; the fact that British Columbia, compared with most provinces, is undergoing more rapid growth in the nonfarm sector understandably fosters the philosophy of nonintervention as expressed by Dean MacPhee. At the same time, from the heavy concentration of funds in the Okanagan Region one detects a major interest in selecting the best prospects from the standpoint of the agriculture industry rather than any special concern for poor farmers.

To sum up, it appears that the ARDA opportunity has been seen chiefly in terms of infrastructure investment. To some extent through basic research, but more importantly through direct investment in capital structures, the hope is clearly one of placing agriculture in a stronger competitive position.

[1/] Op. cit., p. 415.

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