REGIONAL DEVELOPMENT AND PLANNING

AKADÉMIAI KIADÓ · BUDAPEST

REGIONAL DEVELOPMENT AND PLANNING

REGIONAL DEVELOPMENT AND PLANNING

BRITISH AND HUNGARIAN CASE STUDIES

Edited by

P. A. COMPTON AND M. PÉCSI

(Studies in Geography in Hungary, 12)

The main topics of the first British—Hungarian Geographical Seminar were the methods and analyses of regional planning. The lectures dealt with the following problems: (1) Regional planning and regional policies; (2) Agriculture and regional development; (3) Industry, tourism and regional development; (4) Regional evolution and regional problems; (5) Lanscape classification and regional development.

The volume gives information about regional planning in Great Britain and about various methods and theories concerning national and regional planning in Hungary. British regional planning is of an advisory character without being legally binding, as in the case of Hungary. Hungarian regional planning is on three different levels. It contains national economic plans, regional plans and local development plans.

The analyses and considerations included in this volume may provide valuable information for specialists engaged in this and related fields.

AKADÉMIAI KIADÓ

Publishing House of the Hungarian Academy of Sciences

BUDAPEST

ISBN 963 05 0890 7

REGIONAL DEVELOPMENT AND PLANNING

British and Hungarian Case Studies

STUDIES IN GEOGRAPHY IN HUNGARY, 12

Geographical Research Institute,
Hungarian Academy of Sciences, Budapest

REGIONAL DEVELOPMENT AND PLANNING

BRITISH AND HUNGARIAN CASE STUDIES

Edited by

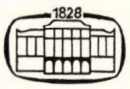
PAUL A. COMPTON

Lecturer in Geography
The Queen's University of Belfast

and

MÁRTON PÉCSI

Director of the Geographical Research Institute,
Hungarian Academy of Sciences, Budapest



AKADÉMIAI KIADÓ · BUDAPEST 1976

ISBN 963 05 0890 7

Printed in Hungary

AUTHOR LIST

G. J. ASHWORTH
Department of Geography, Portsmouth Polytechnic — Portsmouth

T. BERNÁT
Department of Economic Geography, Karl Marx University of Economics — Budapest

Gy. BORA
Department of Economic Geography, Karl Marx University of Economics — Budapest

E. M. BRIDGES
Department of Geography, University College of Swansea — Swansea

J. T. COPPOCK
Department of Geography, University of Edinburgh — Edinburgh

Gy. ENYEDI
Geographical Research Institute of the Hungarian Academy of Sciences — Budapest

E. K. GRIME
Department of Economics and Geography, University of Salford — Salford

G. HUMPHRYS
Department of Geography, University College of Swansea — Swansea

J. KÓRÓDI
Institute for Construction, Economics and Organization — Budapest

Gy. KRAJKÓ
Department of Economic Geography, University of Szeged — Szeged

W. F. LEVER
Department of Social and Economic Research, University of Glasgow — Glasgow

R. H. OSBORNE
Department of Geography, University of Nottingham — Nottingham

M. PÉCSI
Geographical Research Institute of the Hungarian Academy of Sciences — Budapest

S. RADÓ and Á. PAPP-VÁRY
Ministry of Agriculture and Food — Budapest

M. E. C. SANT
Centre of East Anglian Studies, University of East Anglia — Norwich

B. SÁRFALVI
Department of Regional Geography, Eötvös Loránd University — Budapest

D. J. SPOONER
Department of Geography, University of Hull — Hull

C. THOMAS
Department of Environmental Studies, The New University of Ulster — Coleraint

K. WARREN
Department of Geography, University of Oxford — Oxford

CONTENTS

INTRODUCTION

The first British–Hungarian Geographical Seminar on the theme "*Regional development: methods and analysis*" was held in Nottingham from April 17th to 22nd and in London from April 23rd to 26th 1974. The seminar was sponsored by the Great Britain/East Europe Centre and the British Council: valuable assistance was given by the University of Nottingham, the London School of Economics and Political Science and the Royal Geographical Society.

The seminar marked the culmination of many years of formal and informal contacts between the geographers of the two countries at international congresses in both Hungary and Britain. The first hesitant steps in the post-war periods were taken in the early 1960's. Professor D. Stamp and Dr. C. Willets were guests at the 90th Anniversary of the Hungarian Geographical Society at Balatonszabadi in 1962, which was also the venue of the I. G. U. National Atlas Commission. R. H. Osborne in 1961, T. Elkins in 1963, F. E. I. Hamilton and P. A. Compton in 1964 made study tours in Hungary while from the Hungarian side Gy. Bora visited Britain in 1963. However, it was the 1964 I. G. U. London Congress that marked the turning point in relationships. A large party of Hungarian geographers attended — I. Bencze, Gy. Bora., Z. Borsi, Gy. Enyedi, L. Kádár, J. Kóródi, S. Láng, Gy. Miklós, M. Pécsi, S. Radó — and from it evolved everwidening contacts between the geographers of the two countries.

Although the idea had been mooted earlier, the first serious attempt to organize a British–Hungarian Seminar was embarked upon in 1969. In the January of that year György Enyedi attended the Annual Meeting of the Institute of British Geographers as a European guest and after discussions with Professor William Kirk (then Secretary of the Institute of British Geographers) and Paul Compton, it was decided to go ahead with the organization of a seminar to be held in Budapest in 1971 immediately after the I. G. U. Regional Conference. The Institute of British Geographers and the Hungarian National Committee approved these arrangements. The organization went ahead smoothly: the theme was agreed and a programme drawn up. Unfortunately the British side had regretfully to withdraw from the seminar at a late stage which was a disappointment to both parties.

The commitment to the seminar remained however and for reasons of organization it was decided to reverse the venue and hold the first seminar in Britain. By this time Professor Kirk had retired from his position as Secretary of the Institute of British Geographers and his role was taken over by the new Honorary Secretary, Professor Richard Lawton. P. Compton was still

liaising with Gy. Enyedi and it seemed only natural that his department as Queen's University, Belfast should act as host for at least part of the seminar. However, because of the civil unrest in Northern Ireland, this proved inadvisable and Professor R. H. Osborne and F. E. I. Hamilton kindly offered their departments at Nottingham University and the London School of Economics and Political Science as the venues for the seminar. These four persons — P. A. Compton, F. E. I. Hamilton, R. Lawton and R. H. Osborne — formed themselves into a small organizing committee which made the necessary arrangements in Britain for the seminar. On the Hungarian side, György Enyedi and on his departure to Montpellier, Gyula Bora performed a similar role.

PART ONE

REGIONAL PLANNING AND REGIONAL POLICIES

REGIONAL PLAN MAKING: AIMS, OBJECTIVES AND POLITICAL BACKGROUND

by

E. K. GRIME

Regional Plan making in Britain has a long history; as far back as the 1920's plans with a strong physical emphasis were being prepared, a good example of which was the one for the Manchester Region (R. R. S., 1926). In the 1930's attention was, quite rightly, focused on the Special Areas of the North-East, Wales, and Scotland from an economic and social point of view. During the 1940's many conurbation plans were produced in anticipation of post-war reconstruction. Perhaps the best known is the one for Greater London (Abercrombie, 1945), although, especially in the context of this paper, those for Manchester (Nicholas, 1945) and the Clyde Valley (Abercrombie, 1949) are very important. Planning of any sort was not very much in evidence during the 1950's, but in the 1960's, prompted by certain government reports (HMSO, 1963a, 1963b) its importance was rediscovered and it was given a timely boost by the incoming Labour government of 1964.

Almost immediately the Department of Economic Affairs (DEA) was created, and under its auspices two main innovations were introduced: a National Plan (HMSO, 1965) was prepared and Regional Economic Planning Councils and Boards were established. The aims of the DEA had wide support from both sides of industry but the National Plan foundered almost before it was launched and the Regional Economic Planning Councils proved to be disappointing for they had no statutory role. In spite of this the local planning authorities — the County Councils and County Borough Councils saw them as a threat to their independence. This independence over physical planning matters, vested in the local authorities since the 1947 Town and Country Planning Act, and continued in the subsequent legislation of 1968 and 1972, has often meant that problems have been seen in isolation and solutions with a local rather than a regional perspective have been proposed. The recently introduced reforms of local government should prove helpful in sub-regional (i. e. city region) planning because there will now be a more coherent statutory base, but regional strategic planning will still be advisory and outside the statutory framework.

It is important to establish the fundamental difference between "regional planning" on the one hand, and the identification and attempted solution of "regional problems" on the other. Regional planning is important in all areas whatever the state of the regional economy, for it is concerned with establishing an understanding of the processes which lead to change in the system and creating a broad strategic plan which will act as a guide for future development. The regional planner in Britain has no control over regional economic policies which are centrally directed, and no say in their physical

implementation. In spite of these substantial difficulties, however, regional planning teams have been established with increasing regularity over the past 50 years. Their most enduring characteristic has been their transient nature!

Indeed in the period 1965 to mid-1970 at least 113 studies which had a regional content were undertaken in Britain. The list, published as Appendix 9 to the *Long-term Population Distribution in Great Britain — A Study* (HMSO, 1971), groups the reports under six headings. They are (with the number of entries in brackets):

1. Major regional studies (2)
2. Studies into the natural growth or interaction of large towns or cities (7)
3. Land use transportation studies (22)
4. Feasibility studies for planned expansion and overspill schemes (24)
5. Sub-regional studies (47)
6. Miscellaneous (11)

TABLE I

Region	Title	Commissioned by	Undertaken by	Objectives
South-East	Strategic Plan for the South-East (SPSE)	Government, Planning Council, Standing Conference of Local Planning Authorities	Chief Planner MHLG Joint inter-departmental and Local Authority team plus consultants	To prepare a medium and long-term physical and economic planning strategy for the South-East
West Midlands	West Midlands Regional Study (WMRS)	Standing Conference of Local Planning Authorities	Local Authority Planning team with Government assistance	To prepare a long-term strategy for the future development of the region
North-West	Strategic Plan for the North-West (SPNW)	Government, Planning Council, Local Planning Authorities	Officers seconded by D. O. E., Local Authorities plus some direct recruits	To provide a regional framework for a wide range of government decisions and to guide L. A. in carrying out their statutory planning responsibilities
Scotland	West-Central Scotland Plan (WCSP)	Scottish Office, Local Planning Authorities	Officers from Scottish Office, Consultants	To prepare an advisory economic and physical plan for WCS

Major regional studies, of which the SPNW and the WCSP are examples (see Table I) are designed to provide the foundation for a definite strategy over a large area usually, but not necessarily, incorporating a major conurbation. They are intended to have a substantial economic content. Studies

into the natural growth or interaction of large towns or cities (N. D., 1969, C. S. W., 1971) have had as their objective the orderly expansion of growth to avoid the difficulties which, in the past, have been created in conurbations. They have generally resulted in physical, rather than economic based plans. These studies have usually been undertaken by local authorities who have set up special teams on short contracts. The land use transportation studies have nearly all been done by specialized consultants. The planned expansion and overspill studies have usually been undertaken by consultants commissioned by the ministers responsible for planning in England, Scotland and Wales. In most cases the reports have been accepted and New Towns designated, e. g. Runcorn New Town in the North-West and Irvine New Town in Scotland. Sub-regional studies have been largely concerned with areas of special economic difficulties perhaps arising from a declining industrial structure. The study of North-East Lancashire undertaken by the local authorities is a good example. The miscellaneous group includes such studies as The Morecambe Bay barrage scheme.*

The rest of this paper examines the background and aims of two major regional studies, those for the North-West of England and West-Central Scotland. The following table enables a quick comparison to be made of four recently completed plans (*Table I*).

It can be seen from Table I that the commissioning bodies in three cases were the government and the local authorities acting together, while in the case of the West Midlands the local planning authorities took unilateral action in both commissioning the work and staffing the study team. Staff seconded by the various government departments (in Scotland the Scottish Office) formed the nuclei elsewhere. In addition, in the case of SPSE and WCSP consultants were used to tackle certain problems which the established team either did not have time to do or did not have the technical expertise to carry out. No local authority staff were seconded to the WCSP.

WEST-CENTRAL SCOTLAND PLAN (WCSP)

THE BACKGROUND

The WCSP examines a region with severe problems, most dramatically revealed in the high level of emigration — a net loss of 362,000 people being recorded between 1951—1970. Since the 1930's West-Central Scotland has been a problem region with a persistently high level of unemployment and a poor industrial structure which has been of fundamental significance in the region's net relative decline. Randall (1973) suggests that other causes might be the size, organization and ownership of establishments; for example, a low incidence of local ownership, research, or higher management positions, together with problems of industrial relations and management. While Cameron (1971) points out that there might have been a failure to attract a reasonable share of mobile industry to the region on the one hand and a failure to generate new Scottish based companies on the other.

* This paragraph draws heavily on information contained in Appendix 9 of the Long-term Population Distribution in Great Britain (HMSO, 1971).

The most important regional forerunner of the WCSP is the 1946 Clyde Valley Regional Plan (Abercrombie, 1949). This is a magnificently detailed document which has been used as a guide by local authorities in developing their local physical planning proposals throughout the post-war period. It was this document which recommended New Towns at East Kilbride, Cumbernauld, Houston and Bishopton, the first two of which have been built. The main proposals in the plan were not immediately accepted by the Glasgow Corporation, however. They were more influenced by a report of their own Chief Engineer (Bruce, 1945) which suggested that decentralization of population was unnecessary and that Glasgow's housing needs could be met within the City's boundaries. Central government was more impressed by Abercrombie, however, and, in spite of opposition by Glasgow, designated the first New Town at East Kilbride in 1947. Gradually Glasgow's attitude changed, and, by 1971 two New Towns existed and two more had been designated, at Irvine and Stonehouse, while no less than 44 formal "overspill" agreements had been made with other Scottish local authorities. The Glasgow opposition illustrates a point made in the introduction, however, that there is no guarantee that the recommendations of a regional plan will be carried out even though central and local government are often agreed on the need to place development into a regional context.

The WCSP was established in 1970 with objectives which included the following (more details are given in *Appendix A*):

"To prepare and keep up-to-date an advisory economic and physical plan for West-Central Scotland which will serve as a guide to local planning authorities in preparing their development plans, and as an outline framework for decisions by developers."

It will be seen that the plan is intended to be advisory and should have an economic and physical content. It is difficult, for reasons stated earlier, to know how the planning team can make an economic plan in the absence of any national guide-lines. It can, of course, complete an economic analysis of past trends and make land use provision for future industry but it would have no control over levels of investment.

It is perhaps fortuitous that local government reform in Scotland (Wheatley, 1969) has just created a new unit of local government which roughly coincides with the Plan area. This new unit, incidentally, was recommended in chapter 12 of the 1945 Plan. Abercrombie noted that "the present system with its water-tight compartments of Local Government areas is altogether inadequate and unsuited to the problems which face the area". He was convinced that a Regional Administration for the Clyde Basin was not only desirable but necessary. The specified functions were to include the acquisition and control of land required for green belt, regional parks, conservation of water resources, establishment of New Towns, the oversight, in an advisory capacity, of the local planning schemes, the supervision and control, again in an advisory capacity of the Regional Plan, and to act as an advisory body in connection with the distribution and location of industry within the conurbation. It could be that the WCSP will form the basis (perhaps with modifications) of the structure plan which will be prepared within the region.

The Steering Committee was set up by the Secretary of State for Scotland and consisted of representatives from all the local authorities and persons nominated by the Secretary of State. He nominated a large number of industrialists and just one member from the Scottish Trade Union Congress. Perhaps, he thought that the local authority members would, in the main, have trade union connections. In total there were 47 members.

Although, in theory, there is political control, however imperfectly reached, in practice the planning goals and objectives are reached professionally. The team do report to the Committee but very infrequently.

By March 1971 the planning team, recruited exclusively from the Scottish Office, was established and for a year the team worked to the Steering Committee. In April 1972, however, fundamental changes occurred, the facts of which can be clearly established, but whose background is inevitably more speculative. The study director seconded from the Scottish Office, was replaced by an outside appointment and outside consultants, Sir Colin Buchanan and Prof. K. J. W. Alexander, were appointed to take overall charge of the team's work. At the same time a smaller Executive Committee was drawn from the membership of the full Steering Committee to exercise detailed control over the team's work, although the Steering Committee remains in existence and will receive the final report.

At least, in part, these changes must have been political, hinging on the interplay between central and local government. A ministerial statement (Younger, 1970) had attempted to allay fears that the whole project was a "Scottish Office exercise" but, as has already been noted, the entire team was seconded from the Scottish Office. Two political interpretations of the events of April 1972 are possible: either the Scottish Office realized that when the final report was made, it would have more freedom to react if it was not so obviously involved, or, the local authorities really did see the programme working out as a Scottish Office job and felt that its control should be diminished. A further, non-political factor was that technical gaps in the professional team itself needed filling. The officially stated reason was that pressures were building up (e. g. unemployment was still rising) and the tempo of work needed to be quickened. The difficulties experienced in this project demonstrate just how fine is the balance between local and central government in the field of regional planning

STRATEGIC PLAN FOR THE NORTH-WEST

The SPNW covers a much larger area than the WCSP. It contains not one but two major city regions — Manchester and Liverpool — and has a population of 6·7 million. As in West-Central Scotland net outward migration has been increasing so that the annual figure is now about 17,000 persons. In 1971 total regional employment was 3·5% lower than in 1952, whereas total national employment was 7·5% above the 1952 level. The region is likely to have a declining share of the country's total population and employ-

ment, although there might well be an absolute increase in total population. The North-West's problems are not so acute as are those of the Glasgow region but, nevertheless, are severe enough to cause considerable regional concern.

Concern has, of course, been shown before. It is almost 50 years since a plan for the Manchester region (R. R.S., 1926), which covered roughly the same area as the new metropolitan county, had as its first function "to advise in the promotion, co-ordination and linking up of town planning schemes". In addition the 1926 plan examined:

1. the chief lines of communication by road, rail and water including suggested widenings and improvements of existing roads and the lines of suggested new roads;
2. the allocation of particular portions of the area for particular uses, having regard to the development of the whole;
3. the location of regional parks, open spaces, or other reservations necessary or desirable in connection with the development of the area.

The 1926 plan clearly stated that action along the proposed lines "would produce a far better plan for future development than could ever be produced by each separate local authority in the Area preparing its own scheme of development". Another cherished hope was that land and building values might be stabilized by the setting down of definite lines of future development (i. e. zoning).

A further report (Nicholas, 1945) was prepared for the Manchester and District Regional Planning Committee. It covered a smaller area than the 1926 plan being focused on Salford and Manchester and the adjacent municipal boroughs and urban districts. A substantial part of the report deals with physical planning and the environment which was, and still is, a major area of public concern. In addition a thorough survey of industry and transport was undertaken. The conclusion contains an illuminating sentence indicating that some planners were already aware of the dynamic nature of the problems facing the region. "Immediate plans", it was stated, "may be modified to meet existing conditions, but should be constantly reviewed in the light of the long-term requirements".

Gradually, planning has become more flexible and less rigidly deterministic. The problem, however, remains stubbornly similar. In part, the SPNW's terms of reference said that "the framework plan must indicate a desired future pattern of social, environmental and economic development for the region, aiming at the proper use and conservation of regional and national assets . . . the framework plan should suggest policies for the solution of major, long standing, physical planning issues of regional significance, and throw light on the areas for which the joint submission of structure plans may be appropriate". (See *Appendix B*, 2.)

It has already been noted that, in Scotland, Abercrombie advocated the setting up of statutory regional planning machinery in the 1940's. In the 1920's it was far too early for any radical changes — indeed town planning itself was still in its infancy. The 1926 plan instead advocated "decentralized area statutory town planning committees" to carry out the proposals of the

regional plan. The whole scheme was promoted by local authorities who clearly were unwilling to off-load any of their powers.

By contrast, in 1974 local government reform was introduced. Since April 1st of that year Liverpool and Manchester each have had a metropolitan county covering their "city regions". Three other "shire" counties cover the rest of the North-West region, so in future there will be just five authorities dealing with "structure" planning at the regional scale. This is a tremendous advance organizationally and might lead to a reduction in the number of planning conflicts, although it must be remembered that there are 36 county districts who have responsibility for local plans and implementation.

POLITICAL CONTROL AND MANPOWER

The SPNW was commissioned in 1971 by the Government, the Local Planning Authorities and the North-West Economic Planning Council. Amongst some of the officers in various ministries there had been a long-standing feeling that structure plans needed to be co-ordinated, but attempts by the then Ministry of Housing and Local Government to bring local authorities together had failed. As early as July 1970 an internal group of officers met "to consider the need for a study for the making of a regional plan for the North-West; to make recommendations as to the objectives, scope and methods, organization and staffing of such a study; and to advise upon the manner of securing the engagement of local authorities in it".

It seems clear, then, that the initiative came from the regional branches of central government operating in Manchester. These initiators put their ideas to a meeting of local authority members, in February 1971. This meeting was also attended by government representatives and members of the Economic Planning Council. The ideas were accepted and the terms of reference were approved (see *Appendix B*).

It was decided to set up a team of people seconded by local authorities and central government plus some direct recruits, the costs of which were to be shared equally by central and local government. The commissioning body (i. e. the meeting of local authority members etc.) who approved the idea in February 1971 maintained a watching brief during the course of the work which was carried out from July 1971 to July 1973.

The team worked primarily through a consultative committee consisting of a body of officers meeting about once every three months to consider progress. To this committee each local authority was invited to send its clerk and planning officer; the Department of the Environment had a representative from each of its planning, housing and transport sections. The committee chairman was the Regional Director of the D. O. E., who also happened to be chairman of the Economic Planning Board. This, then, was an "officials" committee 'par excellence'.

The planning team had some twenty technical members of staff, divided into six groups, covering transportation, environment, economics, demography and statistics, social aspects, and design and co-ordination (including mathematical modelling). No consultants were engaged, although an econom-

ic advisor was employed on a part-time basis. The team completed its task and published its draft report for consultation in July 1973, and continued in existence to 31 March 1974 to expand on its first report.

It has been suggested in the report that a small and high powered team should continue in existence to advise among other things on how, in practice, the strategic plan might be applied or modified to guide the structure plans, the early stages of which have been prepared simultaneously. At the time of writing (February 1974) no decision has been reached.

CONCLUSION

The initiatives for both studies came from central government acting through regional branches. In each case the idea had to be 'sold' to the local authorities who gave their approval but then had little political control over subsequent events.

There was considerable variation between the staffing of the two teams. In Scotland civil servants were totally responsible for the first year of operation with no local authority secondments at all. In the North-West a potentially more acceptable mix was agreed at the outset. This does not, of course, mean that one plan will be more acceptable than the other, but it is possible that with a little more fore-thought some of the difficulties which occurred in Scotland might have been prevented.

Finally, it would appear that although the advisory nature of regional planning in Britain is helpful to local authorities, in order for it to be really effective it must have a statutory base and be seen to contribute to a national plan in which are established clear goals and objectives.

ACKNOWLEDGEMENT

I would like to thank A. G. Powell, the Director, and R. Porteous, the Secretary, of the Strategic Plan for the North-West, and J. N. Randall of the West-Central Scotland Plan, for the assistance they have given. Of course, the views expressed are entirely my own.

REFERENCES

Abercrombie P. (1945): Greater London Plan (1944). *HMSO.*
Abercrombie, Sir. P. (1949): Clyde Valley Region Advisory Plan 1946. *HMSO.*
Bruce (1945): A Report on Glasgow's housing prepared by the then City Engineer, Glasgow.
Cameron, G. C. (1971): Economic Analysis for a declining urban economy. *Scottish Journal of Political Economy*, Vol. XVIII.
C. S. W. (1971): *Coventry-Solihull-Warwickshire: A Strategy for the Sub-region*, HMSO.
HMSO (1963a): *Central Scotland: a programme for development and growth.* Cmnd 2188.
HMSO (1963b): *The North East: a programme for regional development and growth.*
HMSO (1965): *The National Plan.*
HMSO (1971): *Long Term Population Distribution in Great Britain — A Study.*

Nicholas, R. (1945): *Report on the tentative Regional Planning Proposals* for the Manchester and District Regional Planning Committee.
N./D. (1969): *Nottinghamshire/Derbyshire Subregional Study*. HMSO.
Randall, J. N. (1973): Shift share analysis as a guide to the employment performance of West Central Scotland. *Scottish Journal of Political Economy*, Vol. XX, No. 1.
R. R. S. (1926): *Report upon the Regional Scheme.* Manchester and District Joint Town Planning Advisory Committee, Manchester.
Wheatley (1969): *Report of the Royal Commission on Local Government in Scotland.* Cmnd 4150 HMSO.
Younger, G. (1970): *Statement to the first meeting of the West Central Scotland Plan Steering Committee.* (Mimeograph.)

APPENDIX A

EXTRACT FROM THE CONSTITUTION OF THE WEST-CENTRAL SCOTLAND PLAN STEERING COMMITTEE

The Committee has been set up by the Secretary of State for Scotland in consultation with the Clyde Valley Planning Advisory Committee.

Local planning authorities in West-Central Scotland will be represented on the Steering Committee so long as they are members of the Clyde Valley Planning Advisory Committee. The remaining members of the Steering Committee will be nominated by the Secretary of State. Departmental representatives will be nominated by virtue of their working responsibilities and will be members so long as they hold these responsibilities. Other members nominated by the Secretary of State will hold office for a term of two years but may be reappointed if the Secretary of State sees fit.

The object of the Committee will be:

a) to prepare and keep up-to-date an advisory economic and physical plan for West-Central Scotland, which will serve as a guide to local planning authorities in preparing their development plans, and as an outline framework for decisions by developers;

b) to make recommendations from time to time as appropriate to the Secretary of State and the local planning authorities on such immediate issues as may seem to the Committee relevant to the proper planning of the West-Central Scotland area;

c) to undertake or arrange any necessary consultations and/or publicity which seem to the Committee relevant to the plan or its presentation.

The cost of the work will be shared equally between the Secretary of State for Scotland on the one hand, and the local planning authorities comprising the Clyde Valley Planning Advisory Committee on the other. Permanent staff required by the Committee will be recruited and provided by the Secretary of State for Scotland.

APPENDIX B

EXTRACT FROM THE TERMS OF REFERENCE OF THE STRATEGIC PLAN FOR THE NORTH-WEST

1. The planning team is to consider and report with recommendations on patterns of development for the North-West region, taking account of the strategy proposals of the North-West Economic Planning Council, and of the planning work (carried out individually or jointly) of the local planning authorities and of other public authorities with relevant responsibilities. It must also take account of Government policies and decisions, with the object of providing a regional framework plan serving to guide:

a) the local planning authorities and other public authorities in carrying out their planning responsibilities, including in particular the preparation of structure plans under the Town and Country Planning Act 1968;

b) government decisions on public expenditure and economic and social policies relating to the regions development.

2. The framework plan must indicate a desired future pattern of social, environmental and economic development for the region, aiming at the proper use and conservation of regional and national assets and at establishing and maintaining in the North-West region a quality of life in balance with that of the remainder of the country. In so doing the framework plan should suggest policies for the solution of major, longstanding, physical planning issues of regional significance, and throw light on areas for which the joint submission of structure plans may be appropriate.

REGIONAL DEVELOPMENT POLICY AND REGIONAL PLANNING IN HUNGARY

by

J. KÓRÓDI

THE ORGANIZATION OF PRODUCTIVE FORCES AND THE MAIN PROBLEMS OF REGIONAL DEVELOPMENT

During the thirty years that have elapsed since the Second World War, the territorial organization of productive forces has undergone far-reaching change. The extremely rapid growth of productive forces and the revolutionary transformation of production relationships have played a prominent part in the formation of new territorial distributions. More than 60 per cent of the total fixed assets and nearly 80 per cent of fixed assets for the production of material objects have been established since 1945. The fixed assets for the production of material objects have increased two and a half times, employment has risen by 20 per cent and the national income has increased threefold.

The rapid growth of the national economy made possible and simultaneously necessitated the improvement of the territorial structure of the country.

New plants were established mainly in the countryside, and the share of Budapest in the number of people employed in industry decreased from 54 per cent in 1938, to 51 per cent in 1949 and to some 32 per cent in 1973. In the territorial division of industrial labour, the overemphasis in provincial industry on the supply of raw and base materials has lessened as branches of manufacturing industry have developed.

Industrial policy has greatly promoted the development of the established centres of heavy industry in the country. In northern Hungary and Central and Southern Transdanubia large-scale industrial development has been promoted by favourable natural and economic conditions. The old established industrial centres of these regions, both large and small, and their attraction spheres have been gradually transformed into industrialized areas, which has also meant the simultaneous transformation of their socio-economic structure as well.

Considerable development has taken place in the regions that were formerly backward industrially, particularly in the Great Hungarian Plain. Concomitantly with the large-scale strengthening of the old industrial centres that are now declining in relative importance for the most part, new centres of manufacturing and their incidental infrastructures have been established, for instance, in the counties of Heves and Fejér. As a result of geological surveys, considerable deposits of hydrocarbons and thermal water have been discovered in certain regions of the country. Large-scale industrial development has accelerated the process of urbanization and has resulted in the rapid development of existing towns and the rise of new towns. Towns marked out for rapid development, particularly the five main provincial centres of

Győr, Miskolc, Debrecen, Pécs and Szeged, have all expanded faster than the national average.

In the period following the socialist transformation of agriculture we have achieved significant results in balancing the levels of development between the agricultural and industrial regions.

The fundamental social and economic developments that have transformed the organization of the productive forces of the country during the past thirty years have also brought about radical changes in the living conditions of the population. Territorial differences in the levels of housing supply, communal, cultural and medical services have decreased, and divergences in the range of services offered by settlements of the same character have narrowed.

However, in spite of the fundamentally favourable changes in territorial structure, we have been unable to eradicate entirely the regional disproportions that developed before the Second World War. Optimal organization in accordance with socialist principles and an advanced state of productive forces can only be realized after a number of decades.

The problems of territorial structure can be summarized under six points:

1) There is an overconcentration of industry, population and cultural life in Budapest and its environs.

2) Similarly, industry is also overconcentrated along the axis of the Hungarian Central Range of Mountains which runs from the county of Borsod in the North-East to the county of Zala in the South-West. Because of its raw material base, this zone attracts branches of the basic materials and other industries with a multiplier effect and thus renders the development of the other regions of the county more difficult. Much of the labour in this region commutes over considerable distances which is unfavourable from the viewpoint of social and manpower policy. A great amount has to be invested because of this, while structural problems arise as mineral resources are depleted.

3) Some regions of the country, for example, the lower reaches of the Danube and the county of Szabolcs-Szatmár are industrially backward in spite of a favourable background as regards water, manpower and communications.

4) One of the main problems of the development of agricultural regions is what should be done with those areas where local conditions are unfavourable. Agricultural land use is often strongly influenced by natural conditions. Other main questions concern the special investment requirements in the form of harvesters, containers, packers, and transport facilities, the wine and fruit-growing areas and the problems of finding employment for agricultural labour during the off season and the simultaneous elimination of labour shortages at peak periods.

5) One of the problems of the better utilization of tourist and recreation areas, for example the Balaton, Velence and the Danube-bend, is the extension of appropriate organizing centres as well as the development of special infrastructure suitable for the more exacting visitors.

6) Another general problem in many central villages which lack public utilities, and mains water etc., is the supplying of the population with modern primary and secondary services.

All these problems have required, and are requiring, the framing of regional development policies and their planned and steadfast implementation. With a view to solving as well as reducing regional problems, the government set out the following in March, 1971:

— the guiding principles of regional development,
— conceptions concerning the development of the settlement network, and
— the system for regional planning and plans.

Provision was also made for spheres of authority and organization related to regional development.

THE REGIONAL DEVELOPMENT POLICY OF THE GOVERNMENT

1. THE MAIN PRINCIPLES OF REGIONAL DEVELOPMENT POLICY AND LONG-RANGE TRENDS IN THE REGIONAL DEVELOPMENT OF PRODUCTIVE FORCES

Regional development policy in Hungary forms part of general government policy as well as economic policy. It contains the main long-range aims of regional development and determines how they can be attained.

Change in society and the territorial structure of the economy are determined partly by the current organization of productive forces, and partly by the trend, rate and structure of socio-economic growth. In addition to the objective factors that influence the development of territorial structure, well-defined demands and requirements are also generated by the different strata, groups and individuals in society. Regional development policy harmonizes the existing conditions and means, as well as the social demands made on them.

According to the government, the most important guiding principle of regional development is to satisfy the territorial requirements of effective growth of social production. In conformity with natural and socio-economic conditions, this can be attained by:

— the realization of the optimal spatial distribution of productive forces, i. e. the most expedient territorial division of labour, and in accordance with this
— territorial specialization, i. e. mutual co-operation between regions,
— the attainment of the optimal territorial balance between manpower and the means of production.

This can be realized by locating the productive forces in areas that are optimal from every viewpoint, while ensuring the growth of economically underdeveloped areas as far as possible. The viewpoints to be considered in the development of each branch of the national economy result from this most important guiding principle.

In the regional development of industry the location of industrial plants should only be carried out after a thorough scientific examination of the balance between social and sectorial (factory) interests, and demands regarding factory optima and rentability.

In addition to this, the industrial structure of individual settlements and economic planning districts must promote the development of the settlement network, and must ensure economic co-operation and the most comprehensive utilization of raw materials, energy and natural- economic-social conditions. It is absolutely necessary that plants should complement one another with regard to manpower utilization, for instance, the balance between males and females in the labour force and the reduction of seasonal employment. Opportunities must also be provided for the collective use of the incidental infrastructure of establishments and institutions.

In the regional development of agriculture productive effectiveness is also a prime factor. In the first place this can be ensured by promoting development in districts with favourable natural conditions. In areas that are unfavourable from the viewpoint of agriculture, the most economic form of production must be maintained until effective employment in other branches of the national economy can be ensured. The most suitable utilization of such areas from the viewpoint of the national economy seems to be a fundamental change in land use such as afforestation or the establishment of grassland. Tourism in some instances is a possibility.

An essential point in the implementation of guiding principles is the parallel development of transport with the regional development of productive forces. This must be achieved by establishing direct links between individual areas and centres, and by increasing the speed and standard of transport facilities serving commuters, thereby expanding the areas from which labour can be drawn (in Hungary the number of daily commuters exceeds 1 million).

Another important preliminary condition in putting into practice the guiding priciple is that regional development should be in balance with national and international possibilities and objectives with regard to water-supplies.

The expansion of tourism must be aimed at those areas and settlements with favourable conditions and appropriate appeal. Both factors should be explored as extensively as possible and where found to exist, suitable forms of tourism should effectively contribute to economic growth.

Regional development also means that where man's actions are having a deleterious impact on his environment they should cease or be contained within tolerable limits. At the same time no new developments in industry or agriculture likely to have a harmful effect should be permitted. Not least, since man is at the centre of regional development, territorial differences in income levels as well as in communal, social and cultural services should be lessened.

2. THE OBJECTIVES OF SETTLEMENT NETWORK POLICY

The national policy regarding the settlement network has laid down not only the principles of settlement network development, but also marked out those settlements that will be given priority from the viewpoint of social and economic advancement.

Not only have the main directions in which the future development of the urban network has been stated, but the functions and growth trends of lower-

ranking centres have also been laid down. In addition, the policy makes proposals relating to the creation of new centres, although final decisions are left to the local authorities.

The present settlement network is the result of evolution through many centuries and accordingly suffers from certain disadvantages. Above all it is not entirely suited to present production relationships and indeed hinders the development of the forces of production.

The main disadvantages of the settlement network are as follows:

— the overconcentration of economic and intellectual potential in the capital,

— the lack of large centres supplying services and acting as focii of production in Southern Transdanubia, the south-eastern part of the Great Hungarian Plain, and in north-eastern Hungary, and insufficient development of towns that meet the secondary demands of the population,

— the inadequate provision of low-grade service centres in the areas of small villages and detached farms.

The problems of the settlement network derived from these disadvantages will intensify with the growth of technology and the change in economic structure.

The policy regarding the settlement network sets out to eliminate these disadvantages and to prevent distorsions. Its aim is to ensure that the population of each settlement enjoys a wide range of social activities, socialist progress, and the results of technological development. These requirements can be met by the development of settlements with different ranges of functions.

The aim of the policy is to promote the establishment of a settlement network which:

— suits the rational long-range location of productive forces,

— narrows the difference in the range of services offered by similar types of settlements,

— lessens the exaggerated disparities in the living conditions between towns and villages,

— orients the settlements as well as establishes institutions of different functional levels,

— ensures recreation free from urban nuisances,

— makes possible the rational development of infrastructures to ensure communication among the most important settlements,

— reduces the extent of commuting.

Settlement network policy expects the concentration of population to accelerate as economic development proceeds. This will be the result of the increasing demands for modern urban environments, as well as for the distribution of places of work. It will apply to both large cities and smaller settlements as urbanization spreads.

As the settlement hierarchy is extended and the standard of communications improves, individual settlements will be transformed, ensuring a modern healthy environment for the population and new technologies alike. At the same time the policy envisages the modernization of the settlement network. A socialist system of production requires a settlement structure which is more modern than at present, more concentrated as far as order of

magnitude is concerned, and more differentiated functionally. The present structure with its closed character is unsuitable for satisfying the requirements of socialist living.

REGIONAL PLANNING

The regional effectiveness of national economic policy is ensured by a system of regional planning and plans. The objectives of the system are to promote the more effective use of national resources, the more rational spatial organization of the aims of sectorial development and regional co-ordination. In this way we can ensure:

— the co-ordination of development trends with national economic objectives in the individual territorial units of the country,

— the co-ordination of productive and non-productive sectors within the individual regions,

— the narrowing of regional disparities in living standards and the level of services.

The system of regional planning and plans consists of two complementary fields of activity namely: physical plans and regional development plans.

1. PHYSICAL PLANS

Physical plans do not project conceptions of development from the present structure of the national economy, but instead fix an ultimate aim to be attained in the long term. They are based on the environmental, demographic and settlement conditions of individual regions as well as on long-range predictions concerning these factors. Physical plans are technical-physical plans containing socio-economic implications. Their aim is to determine the structure and development of the settlement network, the identification of necessary infrastructural networks, the spatial organization of establishments and the efficient use of individual regions.

In terms of spatial context, the following physical plans may be drawn up:

— for the whole territory of the country,

— for economic planning districts, and

— for special areas.

From the viewpoint of duration, we may distinguish:

— very long-range plans (30—50 years),

— long-range plans (15 years),

— plans of other durations which are determined by specific aims: many of these are medium-range plans.

Technical exploratory work of an economic nature within the framework of drawing up physical plans, the thorough analysis of the historical development of individual units and the working out of alternative development possibilities are the necessary supports of physical planning.

2. REGIONAL DEVELOPMENT PLANS

Regional development plans contain the territorial projections of the national economy. They also contain specific aims designed to eliminate the socio-economic differences among individual territorial units with regard to levels of development.

Regional development plans form a part or a chapter of the national economic plan. Since territorial aspects are closely related to the functioning of the national economy, regional development plans in practice depend on the level of the whole economy and take economic possibilities and development trends into consideration.

Regional development plans are drawn up for:

— the whole country,
— economic planning districts,
— special areas.

As for duration, they can be:

— very long-range,
— long-range or
— medium-range.

The Cabinet-decision establishing regional planning does not prescribe the drawing up of very long-term regional development plans. This is mainly because the methodology for drawing up such plans has not yet been elaborated. On the basis of experiences gained so far, however, we think that the creation of these plans is highly suited to the features of regional development. Therefore, in the future we intend to pay great attention to the development of the necessary methodology in order to be able to plan the main long term features of regional development as part of the national economic plan.

In the field of long-range planning we have already gained experience and the drawing up of the regional development plan for 1976—1990 has been in progress for some years. Also the relevant Cabinet-decision has been made regarding its contents. Its objective is to set out the different trends and degrees of development for the territorial structure of the national economy as well as for the living standards of the population. In addition it lays down the stages and means whereby the objectives may be attained.

The government has set up a separate Regional Committee to draw up the long-range regional development plan, which has been engaged in elaborating and laying the foundation of the plan since 1967.

One of the main features of long-range regional development planning is the approach to the task, which places the spatial aspect of national economic development at the centre. The main question relates to the spatial organization of the population and the economy which serves best the socio-economic development of the country.

The content of the plan from the territorial viewpoint only enumerates those development conceptions which throw light upon the regional and settlement distribution of individual sectors. In this way the effectiveness of sectorial development can be controlled. It also aims at defining the role of sectorial development within the context of regional growth and at raising the living standards of the population which vary territorially.

Experience already gained proves that it is impossible and also unnecessary to set out the detailed development of every sector of the national economy in the course of planning. Taking the conditions of our country into consideration, it is sufficient to examine questions of regional development in the light of the most important sectors, namely industry, the food economy and the improvement of the infrastructure.

Consequently long-range regional development planning cannot be considered comprehensive since it only touches upon the main features. However, it contains the following general guiding principles of regional development:

(a) the fundamental objectives of long-range regional development, namely the main territorial balance of economic development, the guiding principles regarding the levels of economy and services in the different regions and categories of settlement, the main requirements for the spatial development of living standards and conditions, the modernization of the settlement network and the movement of population,

(b) the main conceptions serving the attainment of fundamental objectives such as the designation of development centres, zones and high-priority areas, are stated,

(c) the predictable long run impact of individual high-priority national development programmes, the development trends of establishments of nation-wide character and the demands of special problems in the field of regional development are set out.

Long-range regional development plans are also drawn up for the economic-planning districts and contain the following:

— the probable trend in the number of inhabitants, their composition, the direction and extent of migration, the global structure of employment and the directions for the solution of related problems,

— the directions for the transformation of the economic structure, the balance of the main national economic sectors within the planning districts and the harmonizing of productive and non-productive sectors as well as related development tasks,

— the objectives for the development of the settlement network and individual types of settlement on the basis of the foregoing.

The medium-range development plan is based on the long-range plan, but is more detailed and concrete. It details the main objectives and development trends, contained in the long-range plan, which are to be attained during the period of the medium-range plan and their implementation. It therefore contains and determines:

— the location of large establishments,
— the development trends of productive sectors,
— the territorial distribution of infrastructural development,
— the manpower balance,
— the areas designated for high-priority development,
— the direct and indirect means of attaining these aims.

Points of intersection occur during the drawing up of regional development plans. These comprise the plans for economic growth, and the development of industry, agriculture, living standards, the settlement network and individual high-priority areas.

Finally, it should be pointed out that there is a very close connection between the two broad groups of regional plan. On the one hand, in drawing up regional plans the contents of physical plans of equal or longer range provide very useful information and points of support to be taken into consideration by planners. On the other hand, in drawing up physical plans, mainly those of short-range, the socio-economic possibilities and limits are determined by the regional development plan. On the basis of regional development plans it can be decided which of the longer-range physical plans should be fulfilled during the given period. It is a very important requirement that methodology should be applied to the two kinds of planning which makes possible the closest connection between them. This is all the more necessary because the two types of plan are mutually interdependent. However, since they approach their tasks from different viewpoints, apply different methods and are dissimilar as regards detail, they must also differ from each other.

THE PRESENT ECONOMIC SYSTEM REGULATING REGIONAL DEVELOPMENT

Every element of the system regulating the national economy has a direct or indirect influence on regional development. Within this system the attainment of regional development objectives is expressly served by the undermentioned direct regulators.

a) The central regional development fund, which consists of three separately administrated parts:
— the industrial development fund for state-subsidized areas,
— the fund for the alteration of the industrial structure of coal-mining districts,
— the fund for encouraging the movement of industry from the capital.
b) Financial regulators, namely:
— credit preferences connected with the central regional development fund,
— credit discounts connected with state-subsidized areas,
— other credits, e. g. for the construction of flats for mobile workers,
— other discounts for the investing company and its labour force.
c) Regulators connected with the acquirement, ownership and use of land:
— the charges for developing land and for its use,
— the contribution to communal (town and village) development.

*

Geography has also an important role to play in the solution of the theoretical, methodological and practical problems of regional development. At the request of the government and the competent ministries, geographers are participating in the making of long-range development predictions for the national economy and individual regions. They are also involved in laying down the scientific foundations of planning. Active participation in these operations in turn enriches the whole geography.

AN OUTLINE OF THE EVOLUTION OF LOCAL AND REGIONAL PLANNING IN ENGLAND

by

R. H. OSBORNE

INTRODUCTION — CENTRAL GOVERNMENT AND LOCAL GOVERNMENT

Public planning in any society takes place within the administrative framework inherited, modified and extended by that society. Ever since the Middle Ages the administration of England has been carried out at two distinct levels, viz: "central government", consisting of the Monarch, his Ministers, Parliament, and a "civil service" of permanent officials; and "local government" ("local authorities"), based on a system of counties (and large towns enjoying county status, known in modern times as "county boroughs")[1] exercising powers and duties laid down by the central government.

Within the counties there has always been a "second tier" of local authorities. Today (March, 1974) these are known collectively as "county districts", some being officially entitled "rural" and others "urban" (the latter including many towns with the status of "municipal borough"). Within the rural districts there is a third tier, known today as "civil parishes", and usually coinciding with the area of one village or small town or a group of several villages. These civil parishes are historically derived from the ecclesiastical parishes, or sub-divisions of them, which for many centuries were used as convenient areas for the lowest tier of local government. Local administration, at both county and district level, is performed by permanent officials known as "local government officers", who are appointed by the respective local authority councils. Parish councils do not normally have paid employees of any kind.

Perhaps two of the more important trends in local government in the nineteenth century and early twentieth century were (a) the development of democratically-elected councils at all levels (although based essentially on a householder's franchise) and (b) a strengthening of the role of the county *vis à vis* the two lower tiers. The period since the Second World War has seen some continuation of these trends (including the introduction of a franchise extending to all adults), but even more important has been the removal of certain functions and responsibilities from the local authorities as a group, either to the central government itself or to new public bodies set up by the central government. Thus in the late 1940's, for instance, all electricity power-stations, gas-works and hospitals owned by local authorities were taken over by the central government as part of the Labour Party's nationalization

[1] In the East Midlands the cities of Lincoln and Nottingham enjoyed county status for many centuries until 1974. The boroughs of Derby, Leicester and Northampton became County Boroughs by the Local Government Act of 1888, although it is true that their ancient charters had always ensured a considerable degree of autonomy within their respective counties.

policy. The relief of the poor (public assistance), one of the oldest functions exercised by local authorities, was also taken over in stages. In most instances the day-to-day administration of such transferred functions is now performed either by a local or regional office of a Ministry of the central government or by a regional board of a national public authority. We may thus, perhaps, speak of a third trend towards "regionalized centralization" and simultaneously of a long-term weakening of the role of local government as a whole.

It is against this background that we can now examine the evolution of local and regional planning. The term "local" is here taken to refer to the areas administered by local authorities, while the term "regional" refers to an area larger than a county. Attention is concentrated on England alone, although other parts of the United Kingdom will be mentioned where appropriate. In the Notes examples will be quoted from the East Midlands, since this Region will be studied during the Seminar.

THE GROWTH OF PLANNING BY LOCAL AUTHORITIES

It is true, of course, that all communities in England, but especially the towns, have always had some powers, however weak, to control or influence their "built environment". However, it was not until the nineteenth century that town councils began to exercise really effective control over such matters as building standards and to ensure the provision of certain basic services necessary for public health, such as water supplies and sewerage. Although the enforcement of local regulations ("bye-laws") and the provision of basic services do not of themselves constitute planning in a coherent, comprehensive sense, this growing public control of the urban environment that characterized the second half, in particular, of the nineteenth century should not be underestimated. Another example of the increasing role of town councils was the frequent attempt to attract new industry by local inducements, such as the offer of cheap electricity, or of council-owned land at a low purchase price or at a cheap rent.[2] Such initiatives can now be seen in retrospect as a rudimentary form of local *economic* planning undertaken side by side with those elements of *physical* planning already referred to.

The first Act of Parliament specifically mentioning "Town Planning" was an Act of 1909 permitting county boroughs and county districts to produce "schemes" for new housing areas. An Act of 1919 made "schemes" obligatory for towns with over 20,000 inhabitants and an Act of 1932 extended planning powers to areas that were *already* built-up. The Act of 1919 was additionally important for two other reasons. Firstly, it made provision for financial aid from the central government to enable local authorities to build and administer subsidized public housing at cheap rents, i. e. "council houses". As a result the face of most towns and many villages has been partially transformed within the last fifty years by "estates" of council houses.

[2] For instance, the Development Committee of Derby Borough Council was particularly active and successful in the early 1900's. It attracted several engineering firms to the town, including Rolls Royce.

Secondly, the Act of 1919 permitted *joint* planning schemes by groups of neighbouring local authorities.

In the East Midlands two examples of publications by joint planning committees were: Leicestershire Regional Town Planning Joint Advisory Committee, *Regional planning report* (1932) and K. C. Edwards and F. A. Wells, for Chesterfield Regional Planning Committee, *A survey of the Chesterfield region* (1949). The Leicestershire committee included nearly all the local authorities of the county and the Chesterfield committee comprised a contiguous group of seven local authorities in north-east Derbyshire. (Incidentally, it is interesting to note here the use of the term 'region' for a *whole county or part of a county*: in recent years and especially since the introduction, in 1965, of Economic Planning Regions, the term more usually denotes a *group of counties.*)

The foundations for the present, post-war system of local planning were laid down by the Town and Country Planning Act of 1947. Although it has been superseded by later Acts its essential features still remain. Responsibility for planning (but not for housing) was moved upwards from the county districts to the counties, with the county boroughs remaining, perhaps unfortunately, as independent islands. Counties and county boroughs were called upon to prepare "Development Plans" (for approval by the central government). These were essentially what might be called "land-use allocation plans". These authorities were also to administer a system of detailed "development control", i. e., in effect, control of land-use changes. While the new system of planning was both comprehensive and rigorous it must be stressed that it related primarily to "physical" and "land-use" planning, rather than to economic planning.

Transcending this basic system of local planning, related to counties and county boroughs, other special forms of planning developed in the post-war years. These included the New Towns (New Towns Act, 1946), the Expanded Towns (Town Development Act, 1952) and the National Parks (National Parks and Access to the Countryside Act, 1949).

The *New Towns Act* provided for government-appointed New Town Corporations to plan, build and manage new or enlarged urban settlements that would also be self-sufficient in terms of employment. In most instances development has involved enlarging an existing town or village rather than building on completely virgin sites.

In the East Midlands the only New Towns are in Northamptonshire, viz: Corby and Northampton. Corby had already been developed as a company village by the former iron and steel firm of Stewarts and Lloyds before being designated in 1950. Northampton, a town of considerable size and antiquity, was selected for large-scale expansion in the 1960's.

The *Town Development Act* provides for the planned transfer (with financial assistance from the central government) of industrial firms and their employees and families from the large cities to smaller towns interested in expansion. Examples in the East Midlands are again chiefly in Northamptonshire, e. g. Daventry (agreement with Birmingham) and Wellingborough (agreement with London).

National Parks are major areas of scenic beauty where particularly severe planning safeguards are in operation. Land ownership is not affected, however, and some National Park areas have a considerable population. The Peak District National Park, lying chiefly in the East Midlands, has its own Planning Board, which exercises planning controls in place of the county authorities in whose territory it lies.

THE GROWTH OF LOCAL AND REGIONAL FUNCTIONS BY THE CENTRAL GOVERNMENT AND PUBLIC BODIES

ADMINISTRATIVE AREAS OF CENTRAL GOVERNMENT MINISTRIES AND OF PUBLIC BODIES

Any intervention by the State in the day-to-day life of the nation inevitably tends to lead to the demarcation of territories for periodic visitation or to the setting up of permanent local or regional offices manned by civil servants. An early nineteenth-century example of this trend was the appointment of Factory Inspectors (to implement the provisions of the various Factory Acts, which controlled hours and conditions of work). However, the beginnings of the modern period of state intervention may be said to date from the early part of the twentieth century, under the influence of the Liberal government and then of the First World War. Two important new Ministries were brought into being in this period — Labour and Transport. The Ministry of Labour was responsible for the organization of a network of local "Labour Exchanges" (set up in 1909), grouped into regions, while important regional aspects of the work of the Ministry of Transport developed in the 1930's, in relation to "trunk" roads and to the licensing of bus services and goods vehicles. Another new Ministry (formed by uniting two pre-existing Boards) was that of Agriculture and Fisheries, which developed a system of 'province' for advisory services.

Parallel with the gradual evolution of a regional system of some kind on the part of certain Ministries of the central government there occurred, in the inter-war period, the emergence of regional systems related to new *public bodies* of various types. Although either controlled or sponsored by the central government, these bodies lay outside both the civil service sector and the local government sector. Examples from the inter-war period include the British Broadcasting Corporation, the Milk Marketing Board and the River Catchment Boards (later to become River Authorities). To these may be added the development of regional administration in the Post Office, including both postal regions and telephone areas. In the late 1940's the nationalization of coal-mining, electricity, gas and hospitals increased the number of such bodies.[3] Regional Sports Councils were set up in 1965—66 and Regional Tourist Boards were established following the Development of Tourism Act (1969).

[3] For an account of such developments up to 1948 see E. W. Gilbert, Practical regionalism in England and Wales, *Geographical Journal* 94 (1939) 29—44, and Idem, The boundaries of local government areas *Geographical Journal* 111 (1948) esp. 180—184. See also R. E. Dickinson, Regionalism in Britain (Chap. 9) in *The city region in Western Europe* (1967) 222—257. The classic work by C. B. Fawcett, *Provinces of England: a study of some geographical aspects of devolution* (1919) was revised by W. G. East and S. W. Wooldridge and republished in 1960.

Hitherto, we have been speaking of new forms of local and regional *administration*, often of an *economic* nature, undertaken by the central government or public bodies created by it. The first real example of tentative *economic planning* by the central government related to the attempts to bring new employment to the so-called "Depressed Areas" in the 1930's. Here economic expansion in the nineteenth century, based on extreme specialization, had been followed by very high rates of unemployment when the basic industries — especially coal-mining, iron and steel and ship-building — felt the impact of national and international depression. Moreover, "replacement industries" were very slow to develop spontaneously. The four worst-affected parts of the country were designated "Special Areas" and various forms of financial assistance were made available from the government (Acts of 1934 and 1937). Perhaps the most important achievement was the development of "Trading" (or "Industrial") "Estates", organized by regional non-profit-making bodies for the provision of factories at cheap rents for entrepreneurs willing to set up new industries. Understandably, the inherent problems of such areas of the country were partly obscured by the effect of rearmament in the late 1930's and the Second World War, which artificially increased demand in the depressed sectors of the economy. The 1930's also witnessed the first instance of government pressure in inducing private industry to change its proposed location of new capital investment — the building of a new iron and steel plant in depressed Ebbw Vale, in South Wales, rather than in Scunthorpe, the preferred location.

The whole question of "the distribution of the industrial population" was studied by a Royal Commission appointed in 1937, under the chairmanship of Sir Montague Barlow. Its findings and recommendations were published in the first winter of the war (1939—40). Its chief economic recommendation was to suggest some form of government control over the location of industry. In 1944 the Coalition government issued an important White Paper on Employment Policy, which guaranteed that both main political parties would encourage a "high and stable level of employment" after the war. The document implied not merely a concern for the *national* employment situation, but also for *regional* levels. Although the methods used by the two political parties have differed in detail during the last thirty years, it is fair to say that this general aim has never been questioned.

At the end of the war, the pre-war policies towards the depressed areas were revived and strengthened by the Distribution of Industry Act (1945). This made the Board of Trade (the traditional name for the Ministry concerned with industry) the agency for carrying out government policy. The areas eligible for assistance were altered and received the new name of "Development Areas". (This is rather a misleading term, since it could be claimed that they were essentially *over-specialized* areas of *over-development* "Industrial Diversification Areas" might have been a more accurate name.) The 1945 Act proved to be only the first of a series of Acts which modified the areas eligible for assistance and also the methods of assistance. It is unnecessary to describe these Acts in detail, but the following changes should be noted:

(a) a great widening of the geographical extent of the Development Areas and also the inclusion within them of some weakly-industrialized "peripheral areas" of the country such as the Highlands of Scotland and Wales and much of the south-west peninsula of England, (b) the introduction of cash grants to firms towards the cost of new factory buildings and machinery in such areas, (c) the designation of two other categories of areas, receiving either a higher scale of inducements ("Special Development Areas"), or a lower scale ("Intermediate Areas"), and (d) the reduction of labour costs in manufacturing industries in Development Areas by means of subsidizing the wage bill of firms ("Regional Employment Premium").

The 'Intermediate Areas', introduced in 1970, were designated following the Report of a Committee on the Intermediate Areas (under the chairmanship of Sir Joseph Hunt) (1969). They are areas with problems that are less severe than those of the Development Areas and they therefore receive only a limited range of inducements (chiefly a building grant for new factories).

In the East Midlands two Intermediate Areas were designated, viz: — the "Notts/Derby Coalfield Intermediate Area", in the upper part of the Erewash valley, and the Worksop (Nottinghamshire) extension of the Yorkshire Intermediate Area. For a description of the former see J. M. Smith, The Erewash Valley Intermediate Area, *East Midland Geographer* 5 (1970) 80—87.

Side by side with financial inducements in these various "Assisted Areas" there is a system of control over the volume of industrial expansion in the more prosperous areas of the country. The mechanism is the *Industrial Development Certificate*, which is required for all increases in industrial premises exceeding 15,000 square feet (1,400 m²) (formerly 5,000 square feet for many years). Certificates are granted — or refused — by the Department of Trade and Industry (the successor to the Board of Trade). Local planning authorities are not allowed to permit any industrial development exceeding this limit unless an I. D. C. can be presented by the firm concerned.

THE TERTIARY SECTOR

Since the 1960's special attention has been given to the size and location of the Tertiary sector of the economy. Thus from 1966 to 1973 a tax was paid to the government by Tertiary employers in respect of each employee, in the expectation that this would "squeeze out" labour and so make it available to the "productive" sectors. As regards location the following measures may be listed: — (a) the sponsoring of the Location of Offices Bureau (1963), which encourages business firms to move office employment out of central London, (b) a permit system for new office buildings in the more prosperous regions (1965), somewhat similar to the Industrial Development Certificate system, (c) the offering of financial inducements for firms willing to transfer office employment to the Development Areas (1973). In addition we should mention the longstanding policy of dispersing employment in the civil service and the public sector generally from London to provincial towns.

An example of such dispersal to the East Midlands is the re-location of the Accountant-General's Department of the Post Office at Chesterfield (Derbyshire). All the technical research activities of British Rail, including some formerly located in London, have been

brought together at Derby, already a major railway-engineering centre. It should also be added that many business firms, including banks and insurance companies, have voluntarily moved many of their activities from London, typically to towns within a radius of about 100 miles (160 km). Thus, for instance, Barclays Bank has its credit-card headquarters at Northampton.

A recent official report by Sir Henry Hardman on "The dispersal of government work from London" (1973) may provide a new stimulus.

We thus see that, from relatively modest beginnings in the mid-1930's, official policy, under both political parties, has moved within 40 years to a detailed involvement in the location of all types of employment in all parts of the country. This involves a rather complicated geographical system of financial inducements to firms on the one hand and controls over new factory and office capacity on the other.

THE TREND TO REGIONAL PLANNING

We have seen that the inter-war period witnessed the growth of regional offices of certain Ministries of the central government. This development was powerfully reinforced in the Second World War, when Civil Defence Regions were created (to cope with enemy attack and to promote the war effort), with all the key Ministries being represented in each Region. After the war these regions and their civil servants were retained for peace-time purposes, with some geographical modifications, and with the important addition of the new Ministry of Town and Country Planning. In this way regional co-ordination of the central government's activities, born in time of war, was carried forward into the post-war period. The regions were now officially known as *Standard Regions*, indicating the view that all Ministries having regional offices should adhere to the same pattern of territories. (It should be noted that nationalized industries and services were not affected, which thus developed their own particular patterns of regions.)

In the 1950's, however, the Conservative government severely reduced this system of regional co-ordination. The removal of the regional offices of the key Ministry of Town and Country Planning (by now re-named Housing and Local Government) was particularly unfortunate. By the early 1960's, however, the government was beginning to revise its attitude to regional policy. The persistence of unemployment problems in the North-East of England led to the announcement of "a comprehensive programme of modernization and growth deployed and co-ordinated on a regional basis", embodied in a special White Paper (1963). Of particular significance was the decision to reinstate regional offices of certain Ministries (including Housing and Local Government) in Newcastle and to reinvigorate the regional co-ordination that had been allowed to lapse. The rather different problems of a region of excessive growth were the subject of a "Study" of South-East England (including London) (1964). Other regional studies were in preparation.

The new Labour government of 1964 may be said to have carried these trends to their logical conclusion. It reinstated, in effect, the immediate post-war system, but, in calling the regional representatives of the Ministries a

Regional Economic Planning Board, it gave a planning emphasis to their co-ordinating role. Much more radical was the setting up, alongside each Regional Board (composed of civil servants), of an advisory *Regional Economic Planning Council*, consisting of nominees of the central government drawn from representative spheres of life in each region. The Standard Regions were sligthly modified to become *Economic Planning Regions*. Like the Standard Regions they are essentially aggregates of whole counties and thus acquire any boundary anomalies of their outer member-counties. The Councils, although not democratically elected, have played a valuable role in channelling regional opinion on major issues and in influencing both the Planning Board and the central government. They have also published regional planning "Studies" and undertaken research.[4] On the other hand the County Borough and County Councils, as the local planning authorities, have not always welcomed the apparent insertion of the Boards and the Councils between themselves and the central government, although it is true that their direct access to the latter has not really been impaired. It must be stressed that neither the Boards nor the Councils have any executive powers.

A particularly important development which the Planning Councils have encouraged has been the drawing-up of so-called "*Sub-regional Plans*". These are broad physical and economic plans for major parts of a region that extend into the territories of two or more county planning authorities. These plans have belatedly remedied some of the shortcomings of the early Development Plans of the county boroughs and the counties, which often disregarded the plans of neighbouring authorities, even when there were close economic links across their boundaries. Such sub-regional plans have usually been produced by teams appointed by the county planning authorities themselves.

Sub-regional plans have been produced in the East Midlands for (a) Derby, Nottingham, Nottinghamshire and most of Derbyshire and (b) Leicester and Leicestershire: — Nottinghamshire County Council et al., *Nottinghamshire and Derbyshire: sub-regional study* (1969) and Leicester City Council and Leicestershire County Council, *Leicester and Leicestershire sub-regional planning study* (2 vols., 1969).

At an earlier stage the *South East study* had led to a study of the counties lying along the borders of the East Midlands and the South East: — Ministry of Housing and Local Government, *Northampton, Bedford and North Bucks study: an assessment of inter-related growth* (1965).

CONCLUSION

It may be argued that the chief organizational problem of planning in England, as it has so far developed, is to harmonise what is basically *physical planning*, performed by the *local authorities*, with the *economic planning* performed by *civil servants* at the *regional level*, and, in turn, to harmonize both of these types and scales of planning with the work of the local and regional sub-divisions of the various *national bodies* that either provide services to the public or administer nationalized industries.

[4] For example, East Midlands Economic Planning Council, *The East Midlands study* (1966), followed by Idem, *Opportunity in the East Midlands* (1969).

Within this increasingly complicated system[5] there is a danger that the citizen becomes forgotten. However, the Town and Country Planning Act of 1968 provides him with various possibilities of consultation and participation in local planning, and these have been discussed and popularized in 'People and planning' (1969), the report of a government-appointed 'Committee on public participation in planning' (under the chairmanship of Mr. A. M. Skeffington, M. P.)

POSTSCRIPT

(a) THE REFORM OF LOCAL GOVERNMENT AND OTHER SERVICES

On 1st April, 1974, far-reaching changes took place in the present system of local government, which in essence dates from legislation of 1888 and 1894. The Local Government Act of 1972, which provides for these changes, represents the culmination of three attempts since the Second World War to modernize the system. The Act of 1972 had been preceded by a Royal Commission on Local Government in England (under the chairmanship of Lord Redcliffe-Maud), which in its report (1969) had recommended a system of "unitary areas", i. e. all-purpose local authority areas, with no lower tier of Districts. This recommendation was accepted by the Labour government of 1964—70, but was rejected by the Conservative government of 1970—74 in favour of maintaining a modified two-tier system.

Briefly, the existing 45 counties and 79 county boroughs of England have now been replaced by 45 new counties, of which 6 are "Metropolitan Counties", covering the major conurbations. Within the counties there is a second tier of Districts, usually representing amalgamations of existing Districts, to produce a population of between 75,000 and 100,000, but with a permitted minimum of 40,000 in special cases. The County Boroughs have been demoted to Districts.[6] To a certain extent these changes were foreshadowed in the late 1960's by the amalgamation of many county and county borough police forces and by the setting up of Passenger Transport Executives in some of the large conurbations. It should be added that local government in the London area was dealt with separately by the London Government Act of 1963, which greatly extended the territory of the former County of London (L. C. C.) to produce a new County of Greater London (G. L. C.).

As regards local planning, there will be an important delegation of powers to the new Districts, while the counties will be responsible only for the broad outline of planning, including the formulation of the new type of county

[5] Useful guides to the evolution of local planning and regional planning are: — J. B. Cullingworth, *Town and country planning in Britain* (4th ed., 1972) and G. McCrone, *Regional policy in Britain* (1969). See also: — G. Manners et al., *Regional development in Britain* (1972).

[6] Thus in the East Midlands Economic Planning Region the seven counties have been reduced to five, as a result of the absorption of Rutland by Leicestershire and the amalgamation of Holland and Kesteven (together with the southern part of Lindsey, at present in the Yorkshire and Humberside Region) to form the new Lincolnshire. The five county boroughs have been demoted to county districts, even though three of them — Derby, Leicester and Nottingham — have populations in the 200—300,000 range.

"Development Plan", called a "Structure Plan", prescribed by the Town and County Planning Act of 1968 but not yet introduced in all parts of the country.

It should be noted that, simultaneously with the introduction of the new pattern of local authorities, new organizations were set up for the National Health Service (established in 1948) and also for the administration of land drainage, water supplies and sewage disposal. The *Area Health Authorities*, replacing Hospital Management Committees and Executive Councils administering the services of doctors, are co-terminous with the new counties. The Area Health Authorities are in turn grouped into *Regional Health Authorities*, with territories similar to those of the former Regional Hospital Boards, which, unfortunately, were not co-terminous with the Economic Planning Regions.[7] The existing River Authorities, based upon drainage basins, have been re-formed and re-grouped to produce *Water Authorities*. These also differ in extent from the Economic Planning Regions. Both the Health Authorities and the Water Authorities will absorb a number of duties hitherto performed by the local authorities. The role of local authorities will thus be significantly reduced by these two re-organizations.

(b) THE ECONOMIC PLANNING REGIONS AND THE KILBRANDON REPORT

The 1974 changes in the territories of the counties have inevitably led to some consequential changes in the boundaries of the Economic Planning Regions, although these are not major in character. It may, however, be argued that the reduction in the number of counties and the demotion of the county boroughs, with a consequent increase in the average population size of the top-tier authorities, will reduce the need for the Economic Planning Regions. Only five counties out of the forty-five have a population of less than 400,000 and twenty (including the six Metropolitan Counties) have a population of over 750,000.

More important in its implications for the existing regional system may be the effect of the Report of the Royal Commission on the Constitution (1973), under the chairmanship of Lord Kilbrandon. Although concerned primarily with the constitutional relationship of Scotland, Wales, Northern Ireland, the Channel Islands and the Isle of Man to the British Crown, it also investigated the practicability of elected regional bodies within England. While favouring some greater responsibility at regional level, it was unable to reach full agreement in detail, however. The Commission were generally agreed that there should be no legislative devolution to the regions of England, but a majority of the members felt that "regional co-ordinating and advisory councils" should be set up which would be partly nominated and partly indirectly elected by the local authorities in each region. These councils, which would supersede the present Economic Planning Councils, would formulate "strategic" plans, into which the county "structure" plans would have to fit, and the councils would also have to be kept informed of all capital investment

[7] Thus the new Trent Regional Health Authority differs from the East Midlands Economic Planning Region by excluding Northamptonshire and including the new South Yorkshire Metropolitan County (Sheffield etc.).

programmes in their region to be undertaken by the local authorities, the central government and the nationalized industries.

The political power now enjoyed in the new (March, 1974) Parliament by the Liberal Party (which officially favours regional devolution of power, unlike the two main parties) and by the Scottish and Welsh Nationalists has brought the Kilbrandon Report to the forefront of British politics to an extent that had not been anticipated. It remains to be seen, therefore, what effects the Report will ultimately have on regional administration and planning in England.

(c) THE EUROPEAN ECONOMIC COMMUNITY

The entry of the United Kingdom into the European Economic Community means that in the future British regional economic policy will have to conform increasingly to an internationally agreed framework of regional assistance. This will affect both the delimitation of territories eligible for financial assistance and the manner and magnitude of such assistance.

MAPS FOR PLANNING

by

S. RADÓ and Á. PAPP-VÁRY

In conception regional planning is the ideal area-structure that may be developed from present reality through conscious action. From this it follows that planning should always start from present conditions.

Preparatory work requires the investigation of natural endowments, social and economic features and trends, as well as the condition of fixed assets. These investigations permit conclusions to be drawn regarding planning needs and possibilities and enable the determination of the most economic use of an area and the development of targets that ensure the optimum provision of the population.

The spatial characteristics and structure of an area can only be expressed realistically and vividly by means of the map. Accordingly maps are the indispensable and logical media of planning.

With the help of maps we can illustrate *a)* the present situation, *b)* the events leading up to the present situation, *c)* likely trends of development (population increase and future manpower balance) and *d)* development conceptions, that is "future area-structure".

Maps introduced under points *a)* and *b)* are of informative character. They contain the results of surveys conducted to assess the situation from the point of view of future plans. Maps under points *c)* and *d)* show the direction that progress is expected to take on the basis of scientific analysis of present conditions. They are the area-structure maps of future plans and regional planning.

We can divide maps into two groups according to their role in planning:

— maps illustrating the pre-planning situation and

— regional planning maps (illustrating planned development).

Thus cartographers have the dual role of depicting the initial situation as well as the future development that is desired.

MAP REQUIREMENTS FOR THE PRE-PLANNING SITUATION

Planning specialists unanimously agree that the map requirements of regional planning are much greater than the requirements of other users, both scientific and practical. Many maps are required for the illustration of natural endowments, e. g. the character of the terrain, soil conditions, the climate, water management, social and economic conditions, and the spatial characteristics of infrastructure, energy, water and sewage.

National development maps as well as maps of the planned development

of large economic regions require particularly thorough and many-sided surveys. For the cartographic supply of data, details by village or district are sufficient. For the completion of plans comprising smaller areas, or for areas of high priority and settlement planning, although less data are required, greater geographical accuracy is necessary for correct information. Within the section concerning natural endowments, maps detailing the geology, infrastructure and various net-works come into prominence. For the presentation of the spatial pattern of socio-economic conditions, the information recorded by census districts will as a rule be insufficient and specialized data-collection and representation systems (e. g. the recording and cartographic supply of grid-square data) will be required.

The demands raised in connection with maps displaying national data are as follows:

— the data on the various maps should refer to the same date or period,

— the time between the completion of the map and the recording of the data should be as short as possible,

— the adopted scale-system and the methods of representation should permit easy readability and comparison (as few scales and representation methods as possible should be employed),

The colouring used should promote the easy recognition of regional relationships.

The above requirements may be most expediently satisfied through the centralized supply of map information in the form of regional atlases.

By making similar cartographic data available, we can supplement statistical data and avoid maps which duplicate each other. Maps unsatisfactory from a geographical and visual point of view and those of little use often remain in manuscript form. For this reason, regional atlases have been published in many countries of the world in order to satisfy planning requirements.

THE DATA-BASE FOR PLANNING: THE REGIONAL ATLAS

Information provided by atlases which have been completed at considerable expense over several years become outdated within a relatively short time. The work of planning requires a system of data and information which enables the constant monitoring of change. Several attempts have been made to meet the demand for up-to-date information from atlases.

1. THE PUBLICATION OF LOOSE-LEAF ATLASES

The publication of periodically renewed or supplementary chapters, sheets or pages of the original atlas provides valuable information. Supplementary pages illustrating rapidly changing data such as industry and mineral resources, are frequently published in fewer colours and in a simplified form (e. g. Atlas of Australian Resources, Canberra; Atlas van de Nationale Survey, Brussels).

2. THE PUBLICATION OF ATLASES IN SEVERAL VOLUMES

Sheets or volumes of an atlas should be scheduled in such a way that the sections on population, industry and social features appear immediately after a census. They should be preceded by the section on natural conditions and followed by the part or volume dealing with agriculture, which is usually based on the average of several years. In general, the individual volumes can be published within a relatively short time by the division of the different sections and by the concentration of resources (e. g. Atlas von Niederösterreich, Wien; Atlas de Madagascar, Tananarive; Atlas de Normandie, Caen).

3. THE PUBLICATION OF ATLASES IN OPEN VOLUMES AND IN VOLUMES FOR RESTRICTED USE

In addition to the atlas providing general information, volumes of rather simple execution may be published for restricted distribution. These volumes may then be regularly supplemented with charts illustrating the new situation (e. g. the atlases published by the British Department of the Environment).

4. RELATION BETWEEN PLANNING ATLASES AND COMPLEX GEOGRAPHICAL ATLASES

Up to the present the great majority of atlases that have been completed — in Hungary as well as abroad — are concerned with the influence of regional development and regional planning requirements.

Certain geographers have criticized the analytical character of the atlases and have objected to the lack of material representing the mutual relations between spatial features, and the omission of synthetic maps. This criticism is partly correct. The methods of analyzing natural and economic regions have already been generally accepted. On the other hand, views concerning the question of synthesis differ considerably. In addition to the synthesis employed in geography so far, there is also an area-development synthesis differing substantially from the former with regard to the problems raised and the setting out of objectives. The content of a regional development synthesis having socio-political aims, is considerably limited by the time available for execution and by financial considerations. The methods of pure geographical synthesis, not restricted by external factors, have not yet been solved, while the results so far achieved, for instance, the determination of climatic and agricultural regions, have given rise to lively discussions concerning the accuracy and completeness of the applied indices. Mr Witt, an outstanding personality in regional planning in the Federal Republic of Germany and editor of several regional atlases, has used very strong words in rejecting the critical observations of certain geographers on regional atlases. "The criticism concerning planning atlases appears sometimes to the planner as the impatient attitude of a self-interested science, which — similar to economics and regional science — refrains from preparing its own prognostications for regional de-

velopment, from its own viewpoint and with its own working methods. Geographers have to make proposals that will satisfy the strict requirements of practice (central policies, direction of economic branches and the specialized sciences)" (Witt, 1969).

The development of regional synthesis is conditional upon the theoretical and practical evaluation of experimental solutions and on this basis the continued development of methods. This process may most effectively be assisted by using regional atlases, which are widely known and employed, for the publication of synthetic maps.

For the synthesis of spatial phenomena, an elaborate and thorough scientific examination of the analytical maps is required, which would again delay the time of completion of atlases and would add to outdated information. Mme Beaujeu-G. suggested the publication of atlases in three volumes to overcome this problem and to satisfy jointly the requirements of planning and geography (Beaujeu—Garnier, 1969).

According to this suggestion the *first volume* would contain maps of natural conditions which are relatively constant but yet demand considerable fieldwork and comprehensive multi-coloured execution. The maps would be completed in co-operation with the Academy of Sciences, the various university departments and the cartographers.

The *second volume* would contain maps based on statistical data-recording. Automated methods of cartography would be used and maps would be produced parallel with the processing of statistical data. The maps would be published in co-operation with the Statistical Office, planning enterprises and cartographers. The comprehensive analysis and evaluation of the contents of the first two volumes would then enable geographers and planning specialists to complete the maps of the *third volume* in which a synthesis of the various natural, social and economic phenomena would be presented.

Those features of the first and third volumes which change relatively slowly could then be used for several decades. The rapidly changing data of the second volume could even be published annually in the form of supplementary maps as new data became available.

PLANNING MAPS PRESENTING DEVELOPMENT CONCEPTIONS

It is the designer, who on the basis of the centrally produced, cartographic survey and other materials provided, executes the actual mapping of plans. In this case the role of cartography would amount to:

— the production of adequate base maps for planners,

— the elaboration of map symbols which in conjunction with thematic planning material and the geographical base map, graphically reflect already existing establishments and those planned for the near and/or more distant future,

— the elaboration of rapid, inexpensive processes for the production of maps required in small quantities.

1. REGIONAL PLANNING IN HUNGARY

The decision of the Hungarian Revolutionary Worker-Peasant Government on 12 March, 1971 regarding regional planning and plans, fixed centrally the types of plans and their sequence of elaboration. In accordance with the decision, the basis of regional planning is elaborated by the long-range regional organizational plan worked out at national scale or for individual economic planning regions, which on the basis of the development potentials, expresses the main features of the spatial structure desired in the future.

Details of the schedule of development and conceptions fixed in the long-range regional organizational plan are determined by the regional development plans which form part of the long- and medium-range plan of the national economy. Regional organizational plans and programmes outline the spatial impact of the planning provisions and are completed in accordance with the rules set out in the regional development plans.

In other words, the regional development plans contain the guiding principles for the transformation of a regional structure. The plans also embrace the central measures necessary for the realization of these principles such as, the provision of similar commercial, cultural and health services in defined settlement categories, the social economic and technical basis for developing the production structure of an economic region, the regional trend in the living standards, the areas designated for large-scale investments and the desired direction of labour migration. On the other hand, the regional organization plans represent the spatial projection of the development conceptions.

Planning becomes more accurate spatially as the length of the planning period diminishes. Economic-geographical conceptions are then gradually replaced by technical solutions. In addition to comprehensive plans at national scale or for economic planning regions, the development and organization conception for special regions, such as areas of tourism, protection of nature and industrial regions, and for settlements with central functions is also completed.

The decision of the Government has created only the more important steps in the work of planning. Planning methodology which is still inadequate all over the world, will have to be worked out by means of further detailed research. The colouring symbols and technical execution of the various planning maps should be developed within a methodological framework.

2. MAPS AND PLANNING REQUIREMENTS IN HUNGARY

The practice followed abroad and, with few exceptions, established so far for rather large economic units — for the whole country or for regions — consists of using maps in the execution of plans and of using smaller scale regional atlases (1 : 2,000,000 and 1 : 500,000) in the formulation of development conceptions. National and regional organization conceptions, however, should also be executed in more detail in relation to individual priority areas and settlements. Also the more detailed and spatially defined data required for the planning of priority regions and settlements, the more it should be produced centrally in the form of detailed large-scale atlases. (Endeavours

OFFICIALLY ADOPTED PLANNING SYSTEM IN HUNGARY		THE MAP REQUIREMENTS OF PLANNING IN HUNGARY	
Regional development plans	Regional organization plans	State (condition) survey maps	Planning maps of development conceptions
	Long-range regional organization plans		
Long-range regional development plans of the national economy		National or regional atlases 1 : 500,000—1 : 1,000,000	National and regional planning maps 1 : 500,000—1 : 1,000,000
	Long-range regional organization plans		
Medium-range regional development plans of the national economy			
	Medium-range regional organization plans		
Medium-range local development plans		National or regional atlases 1 : 500,000	National and regional planning maps 1 : 500,000
		Regional atlases 1 : 200,000, 1 : 100,000	Area planning maps 1 : 200,000, 1 : 100,000
	Short-range regional organization plans	Thematic town atlases 1 : 10,000, 1 : 5,000	Settlement organization plans 1 : 10,000, 1 : 5,000
			Realization plans 1 : 5,000, 1 : 2,000, 1 : 1,000

of this kind may be encountered in the German Democratic Republic and in the Federal Republic of Germany.)

Considering the map requirements of planning in Hungary, the following should be available:

— national and regional atlases at a scale of 1: 500,000 — 1: 1,000,000 for the execution of long-range national and regional organizational plans,

— regional atlases at a scale of 1: 100,000—1: 2,000,000 for the completion of long- and medium-range territorial organizational plans for individual priority plans,

— thematic town atlases at a scale of 1: 5,000, 1: 10,000, 1: 20,000 for the processing of the territorial organizational plans of settlements with central functions.

In accordance with United Nations recommendations it is suggested that in Hungary atlases be published in conjunction with the decennial census. The maximum time for the completion of an atlas may be two and a half years to ensure that it is available to users when working out the national economic plans for the next five-year period.

As regards data which are subject to rapid change during the course of two 5-year planning periods we suggest the publication of supplementary maps on two or three occasions. The supplementary volumes to be completed within a period of six months should be published in time to permit their use for the compilation of the next medium-range plan and/or for the evaluation of the preceding plan.

This means, for example, that during the two 5-year planning periods following the 1970 census we recommend the working up of data in the form of supplementary volumes, over and above the regional atlases for 1970, for the years 1973, 1975 and 1978.

At a later date some types of data should also be supplemented through the communication of annual information or even more frequently, employing automated map techniques. A weekly survey in the form of maps, indicating the progress of sowing or of the harvest, provides one such example.

The cartographic back-up to planning described in this paper and its relation to the Hungarian situation is summarized in the Table.

REFERENCES

Csáki N. (1972): Az országos területrendezési terv és körzetrendezés néhány elvi és módszertani kérdése (Some theoretical and methodological questions of national and regional planning). *Városépítés* (Town building), Budapest, 1.

Beaujeu-Garnier, J. (1969): Les atlas régionaux et la géographie française. *Annales de Géographie*, Paris.

Perczel K. (1960): A magyarországi regionális tervezés elvi alapjai (Theoretical bases of regional planning in Hungary). *Építés és Közlekedéstudományi Közlemények* (Proceedings of Building and Transport Science), Budapest, 1—2.

Perényi, I., Jankovich, I. and Keresztély, Gy. (1956): Regionális tervezés metodikája (Methodology of regional planning). *Településtudományi Közlemények* (Proceedings of Settlement Science), Budapest, 8.

Witt, W. (1961): Komplexe Themakartographie in der Landesplannung. *Kartographische Nachrichten*, Gütersloh, 5.

Witt, W. (1969): Planungskartographie. In: Untersuchungen zur thematischen Kartographie. Akademie für Raumforschung und Landesplanung, Hannover.

THE FUTURE OF REGIONAL ECONOMIC POLICY IN BRITAIN

by

M. E. C. SANT

INTRODUCTION

When Parliament passed the 1972 Industry Act (Cmnd 4942), the latest in a long series of measures related to regional policy, the Government undertook to preserve the new framework until at least 1978. In large measure this was to facilitate the first phase of membership of the EEC, but it was also believed that greater stability was needed to enable planners and industrial decision-makers to operate on a more secure basis, not fearing that their actions might be thwarted by a change in the instruments of policy. However, although they are likely to be more effective than their predecessors, in this paper we put forward the assertion that the 1972 provisions are unlikely to be sufficient to 'solve' the regional problem. This implies two, not necessarily conflicting, courses of action. The first is an acceptance of some continuing disparities; the second involves an investigation of additional measures to give the inhabitants of less prosperous regions a greater range of opportunities to achieve higher incomes.

INSTITUTIONAL DIMENSIONS

It is unrealistic to speak of 'policy' as if it were a unique, homogeneous and self-contained function. Instead, we should be aware that policy-making (not only in regard to regions) is one of several stages in the process of intervention by government. The full set of stages, following the definition of problems, comprises:

(a) identification of objectives,
(b) formulation of policies,
(c) designation of policy instruments.

To these can be added (d) implementation and (e) monitoring. The last is an important process, since it allows the success of the policy and its instruments to be calculated and permits further debate to proceed on methods of improving the system. We should add, also, that although it is simple to identify these stages, in practice they are often obscure and the impression is given (not least by politicians) that success is not always related to the speed with which objectives are met. In addition, at least in regard to regional policy, there is not one single objective, as we shall see in the following subsection. Thus, what we have is a system in which policy exists to meet a number of objectives and in which policy is itself served by a number of instruments. This distinction of processes, despite being a simplification, is valuable in discussing the relative success of the system and, subsequently, of ways in which it might be improved.

Diamond (1974) has listed six broad objectives which remain in current usage:

— relief of localized high unemployment,
— restraint of expansion in employment in the congested conurbations,
— fuller utilization of national resources, notably labour,
— reduction of interregional differences to assist with macro-economic management of the economy and control of inflationary pressure,
— maintaining and strengthening of provincial cultures and identity,
— assisting in achievement of a balance between population and environmental resources.

From time to time the emphasis placed on each of these has altered perceptibly and, with it, the regional patterns of resource allocation, as *Figures 1* and *2* imply. However, at no time have there been stated easily quantifiable, operational objectives. Nor has there been an explicit statement of the permanence of regional policy. The statements that have been made, like that referring to Central Scotland (Cmnd 2188, 1963) have tended to be open-ended. In that case the commitment was to stimulate 'viable growth'. At its most strict, 'viability' could be interpreted as self-sustaining growth in per capita incomes, without any form of regional protection, at a level at which full

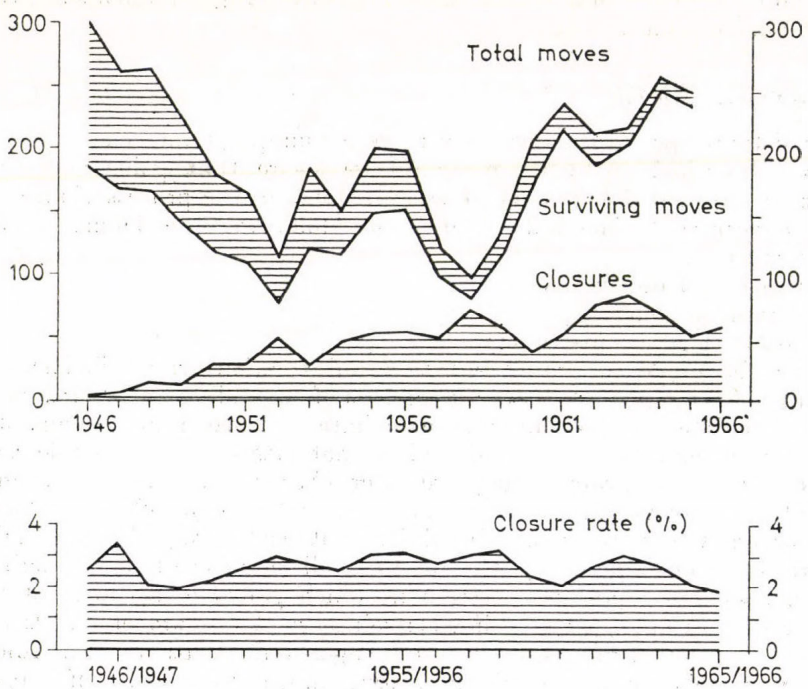


Fig. 1. Time series of industrial movement and closures in Great Britain, 1946—66

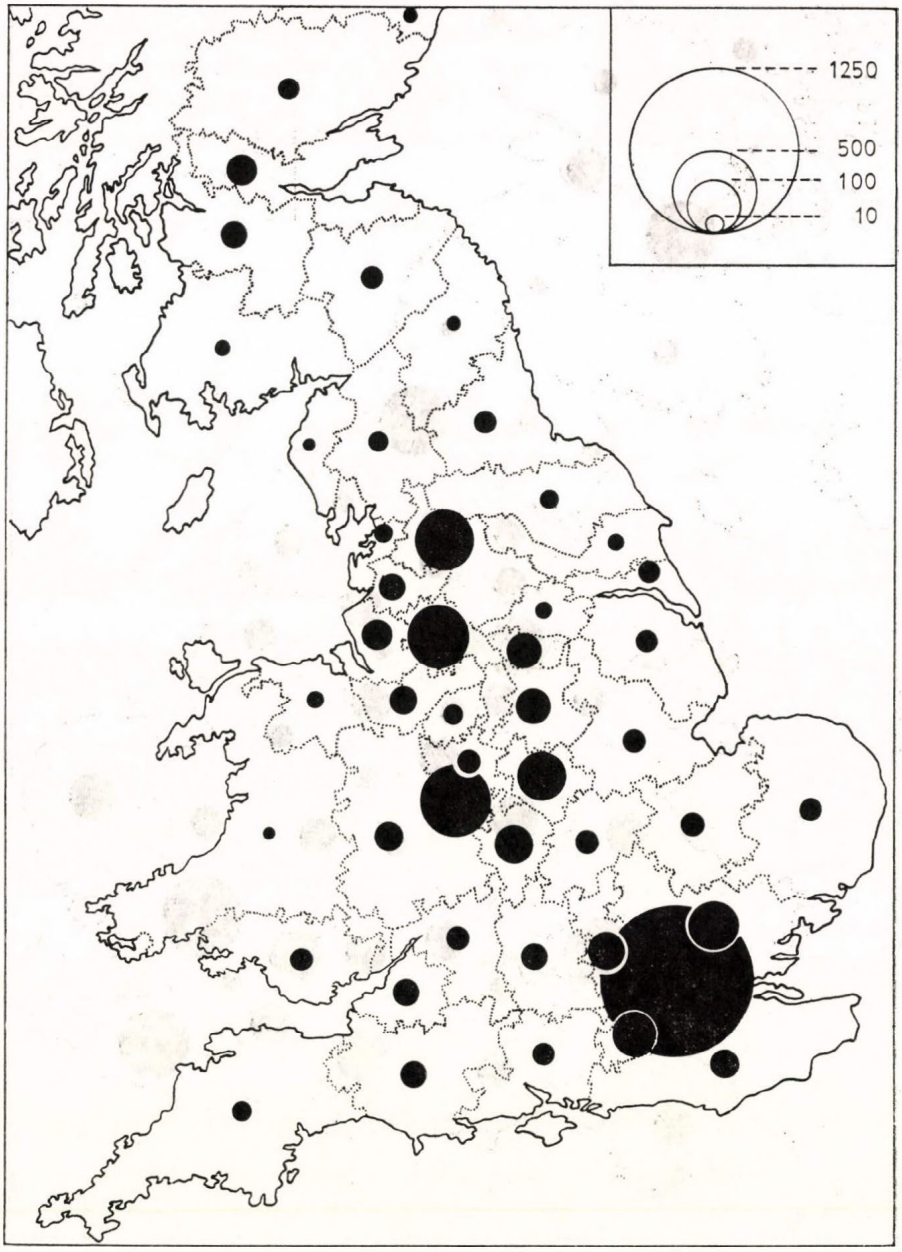


Fig. 2a. Number of moves generated per area, 1945—65

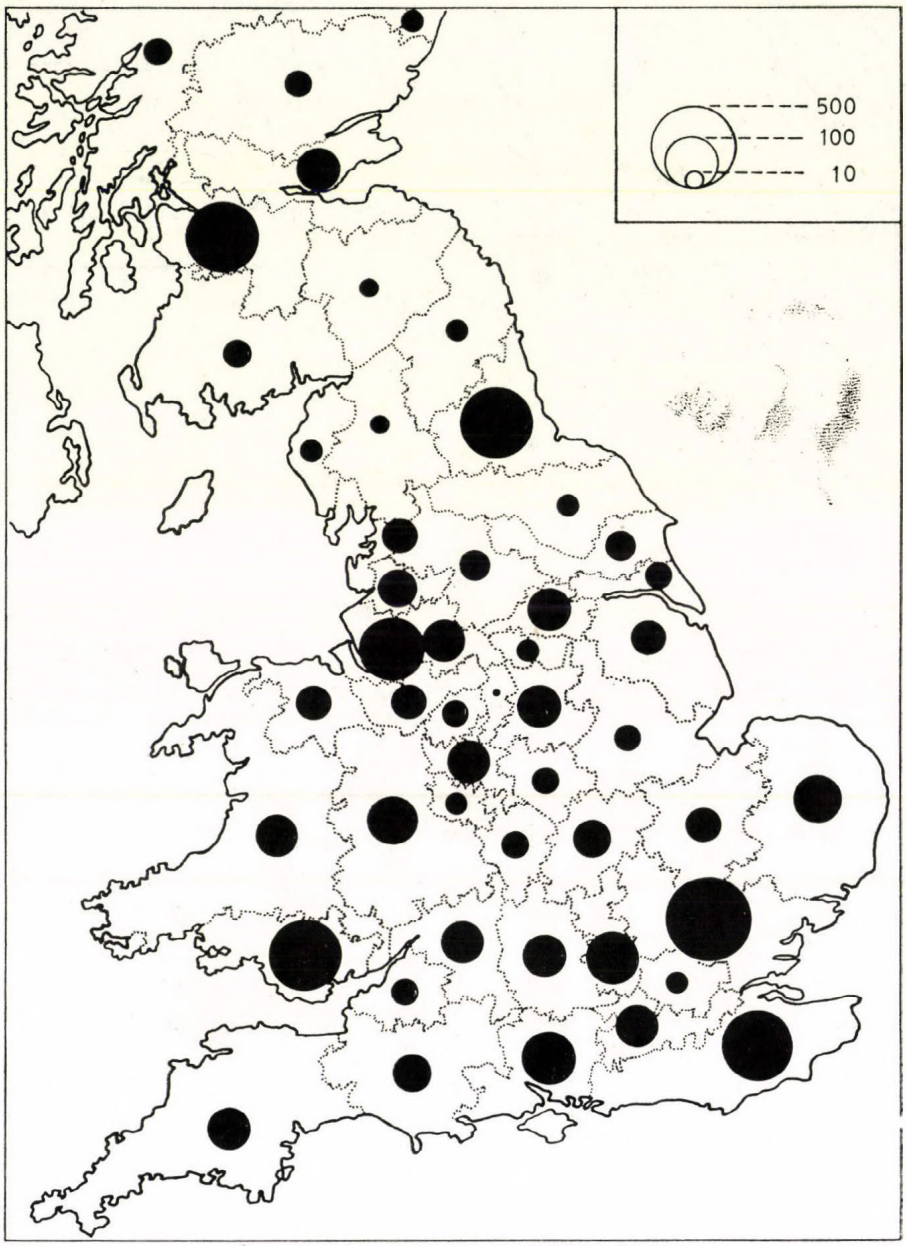


Fig. 2b. Number of moves attracted per area, 1945—65

employment could be maintained with a balanced distribution of factor endowments. However, 'viability' ultimately depends upon 'acceptability', so that as long as disparities remained between Central Scotland and, say, the South-East or Midlands, there would still be a cause for concern.

Furthermore, emphasis has generally been placed on short term objectives — especially the relief of localized unemployment. The result is that although Britain now has a highly structured system of regional policy instruments, the overall direction of regional development is implicit rather than explicit. Nevertheless, it is unlikely that objectives will ever be stated in clearer terms, if only because, as Downs (1957) has argued, "political rationality leads parties in a two-party system to becloud their policies in a fog of ambiguity" (p. 136).

POLICIES AND POLICY INSTRUMENTS

The evolution of policy has been reviewed in detail elsewhere (McCrone, 1969, Brown, 1972) and there is no need for more than a general statement here. One should note, first, that the regions designated for assistance have, over the years, accounted for an increasing proportion of Britain's area and population. At the same time, there has evolved a hierarchy of designations, ranging from special development areas, where assistance is greatest, to Greater London, where controls on development are most stringent, with perhaps half a dozen categories in between *(Figure 3)*. It should be emphasised, however, that although the government has expressed an interest in the 'growth centre' concept, this has never been incorporated in the designation of areas for assistance, unlike the practice in a number of European countries.

Secondly, controls on the distribution of growth, in the form of industrial development certificates (IDC's) and office development permits (ODP's), have become less severe. Under the 1972 Act, the limit for which an IDC is required for industrial building is now 10,000 square feet in the South-East and 15,000 elsewhere outside the assisted areas. There has also been an easing of the ODP system, with the West Midland conurbation no longer controlled. Applications in London are scrutinized against the criterion of whether they would enhance the city's prospects as an international financial and commercial centre, recognizing the capital's aspirations to be the leading business centre in the EEC.

Thirdly, while controls have been eased, there has been a parallel rise in the level of government assistance to private investment and spatially discriminant public expenditure. At current values, aid to industry in the assisted areas rose from £39 million in 1965 to £329 million in 1971 and will probably reach £450—500 million in 1973—74. One should note, however, the arguments of Moore and Rhodes (1973) that this is an Exchequer cost rather than a real resource cost and that the expenditure has, in fact, generated a higher G. N. P. than would have occurred in its absence. The element of subsidy to firms in assisted areas varies from case to case, but Wilson (1973) has calculated that the development grant (for new plant and machinery and a depreciation allowance on buildings) will give producers in development

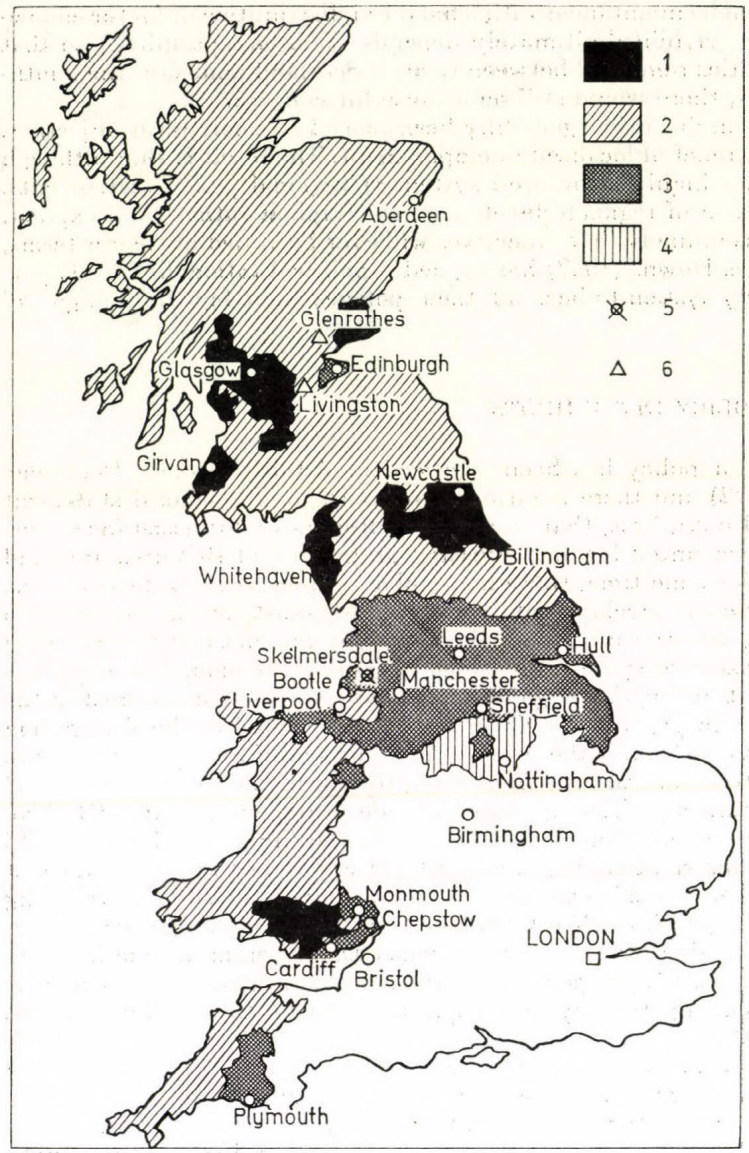


Fig. 3. The assisted areas, 1972
1 = special development areas; 2 = development areas (incl. Orkney and Shetland); 3 = intermediate areas; 4 = derelict land clearance areas; 5 = towns where development area benefits are available; 6 = = towns where special development area benefits are available

areas a cost advantage of about 1 to 2·5 per cent of total manufacturing costs. In addition, producers are eligible for a regional employment premium (or labour subsidy), selective assistance in the form of low interest loans and removal grants, and training grants, which together can give a further substantial subsidy.

SUCCESS OR FAILURE?

In making a distinction between objectives, policies and instruments, the purpose was to provide a framework to discuss the relative success of public intervention. Subsequently, the same framework can be used to consider which, if any, of its elements might require modification. Thus, for simplicity, we can ask whether or not the instruments have served the needs of the policy and then whether or not the policy has fulfilled the objective.

Although varying estimates have been put forward of the volume of job creation and industrial movement in response to policy, there is no doubt that the total is a large one. Howard (1968) estimated that 438,000 jobs in manufacturing had been created in the 'peripheral areas' (approximately the present development areas) between 1945 and 1965 by firms moving from other regions; of these, 122,000 occurred during 1960—65. On the same definitions over 60,000 jobs were created through interregional movement during 1966—71. Brown (1972) compared the progress of the four major development areas (Scotland, Wales, North-East and North-West England) in 1953—59, when the available instruments and implementation were weak, and 1960—66, when they had been markedly strengthened. His conclusion was that relative performance was improved by about 50,000 jobs per annum. Of these, 30,000 were in new jobs associated with IDC approvals (including 15,000 which were the direct result of inter-regional movement); the rest were induced by the multiplier effects of expansion in manufacturing firms. Another estimate, by Moore and Rhodes (1973), using a 'shift and share' analysis, is that manufacturing employment in the Development Areas at the end of the period 1963—70 was 12 per cent higher than it would have been if policy had been as passively implemented as it had been in the 1950's. In absolute terms, this amounted to about 200,000 jobs. Lastly, the results of a survey by the Department of Trade and Industry (House of Commons, 1973) indicated that firms moving to assisted areas were significantly influenced by the various policy instruments. One can conclude, therefore, that the instruments of policy have been strikingly successful.

But what of the policy itself? Can that, too, be described in such unequivocal terms? To answer this, one needs to return to the objectives listed above and estimate the contribution of regional policy to each. Also, to make matters more complicated, we should ideally assign a weight to each objective since, *a priori*, we should expect them to differ in importance from each other. However, such an exercise is impracticable and all that can be achieved is a discursive account.

For practical reasons the last two objectives in the list ought to be discounted. The idea that the loss of interregional cultural diversity represents

a social cost (Stilwell, 1972) has been bitterly attacked by West (1973): "Welfare economics does not countenance the idea that people should be regarded as collectors' pieces, cherished for their ability to speak old dialects or perform in Morris dancing. Many people *want* to shrug off their dialects." (p. 119.) Another, perhaps more realistic view, is that cultural heterogeneity, or its disappearance, is most affected by mass media and travel (both symbols of development) and that regional policy is unlikely to play more than a neutral role. The problem of defining a balance between population and environmental resources is no less difficult. The 'environment', in its broadest sense, has no legal meaning in Britain. Regional strategic planning teams have been charged in their terms of reference with taking account of environmental qualities and constraints and there are policy instruments dealing with the clearance of derelict land. But this is a long way removed from a general policy towards the use of environmental resources. Before this could happen effectively, it would be necessary to have a national "environmental survey". Moreover, there is a fundamental reason why this objective is not a proper one for a developmental regional policy and that this is that, in practice, the idea of aiming for a balance between population and environmental resources is inherently conservative.

The third and fourth objectives are closely related, being based on the belief that regional policy can dampen the cyclical swings in the national economy (exacerbated by inflationary pressures in the South and Midlands) and increase the rate of growth in GDP by diverting demand, especially for labour, to areas of underemployment. In this, it is argued by Moore and Rhodes (1974), policy has proved to have been successful. On the assumption that the productivity of the additional employment was similar to that of the national average, the 200,000 jobs created in the development areas between 1963 and 1970 led to additional output in the UK of about £400—£500 million per annum. This was approximately 1 per cent of GDP in 1970. If these figures are correct (and, it should be stated, the Moore and Rhodes thesis has not yet been fully accepted), then these two objectives would appear to be in the process of being achieved.

The same is also true of the second objective, restraint of expansion in congested conurbations, although this is being done as much, if not more, by intraregional planning as by interregional policy. Decentralization has occurred both to the fringes of all the British conurbations and to new and expanded towns. All the conurbation centres have lost employment and total conurbation populations have grown slowly or even decreased. However, research undertaken for the Greater London Development Plan indicated not only how far decentralization had gone, but also that it had been unbalanced and it concluded that if trends continued, the labour shortage of the 1960's could be turned into a labour surplus in the 1970's, notwithstanding national employment cycles (Foster and Richardson, 1973).

This leaves the first objective, the reduction of regional disparities, especially in unemployment. Here the achievement is less clear-cut. Disparities have proved to be obdurate. The rank order of regions on a number of indicators (unemployment, activity rates, incomes etc.) has changed little over at least the last decade and the differentials have tended to remain stable

(NEDC, 1971). Largely as a result, interregional migration has continued, with the assisted areas all showing substantial net losses. However, as has been pointed out on numerous occasions, these facts do not necessarily amount to an absolute failure. Without the effects of regional policy, the differentials might have grown and migration might have reached more serious dimensions. In this respect, the achievement has been that of a 'holding operation', despite the massive movement of industry since 1945. The reasons for this can be found in a number of factors, such as the continued run-down of older industries, the leakage of induced and indirect (i. e. multiplier) effects to the Midlands and South and the propensity of new firms in the assisted areas to recruit labour from existing workforces rather than the unemployed.

EXISTING REQUIREMENTS

From the above section we can conclude that there is an on-going need to use regional policy for macro-economic demand management. Also, in certain cases at least, it continues to have a role in combatting congestion in major conurbations, though this may be diminishing. It should be added also that the caveat has been put forward that higher social costs may not be inherent in large cities, but may be due to transient factors, such as too fast a rate of in-migration, relative to the increase in urban capacity (Richardson 1972). However, the key to the future of regional policy lies in the requirements for reducing disparities, since it is their magnitude and distribution which is most likely to influence the vigour and character of government action.

By assuming certain operational targets, Ridley (1972) has estimated that the total job requirement in the major assisted areas (Scotland, Wales, Northern England, Yorkshire and Humberside and the North-West) may be over 1 million in the present decade. This figure was reached by assuming:

- an unemployment target equal to a national rate of 1·5 per cent (120,000 jobs),
- a target for female activity rates equal to the current national average (250,000 jobs),
- an expected growth in labour supply, at current rates of out-migration (350,000 jobs),
- expected redundancies in older industries (300,000 jobs).

Compared with estimates for job creation in the past, outlined above; this would represent an enormous goal, if it were undertaken. Clearly, therefore, there is a need to examine the possible sources of additional employment and, in the event of their being insufficient, alternative ways of approaching the problems.

ADDITIONAL SOURCES

The list of possible sources of employment growth has been examined in some detail by Cameron (1974), but it is useful to make a few comments under each of the headings.

(a) *Industrial movement.* As the main arm of policy, it might be expected that government will continue to create and divert the movement of manufacturing industry to assisted areas. However, it is unclear whether this process can continue indefinitely, or whether the supply of mobile industry might begin to diminish. An analysis by the present author (Sant, 1974) suggests that the supply is unlikely to grow larger, although the modern sector of industry does appear to be more footloose. Also, it is clear that industrial movement to the assisted areas is directly affected by the rate of economic growth and investment in manufacturing and by the demands of new towns, several of which are programmed for development in the 1970's. Nor can it be expected that a significantly larger volume of jobs arising from foreign investment will take place than the 3,000—5,000 per annum currently occurring, although membership of the EEC might have a slight effect. Lastly, we should repeat the fears of the two main sources of industry in the past, London and the West Midlands conurbation, that they are in danger of becoming unbalanced, employment-deficient economies, if the process continues much further. Whether wholly true or not, such arguments are bound to carry weight.

(b) *Office relocation.* Most studies of the private office sector have concluded that while there is great scope for the movement of 'lower order' offices out of conurbation centres, it is unlikely that they would move much further than the peripheral suburbs or nearby towns. Part of the reason is that the rent/distance relationship is a hyperbolic curve; that is, it is steep between the city centre and its periphery, but very shallow thereafter. Rhodes and Kan (1971) estimated that only 1 per cent of the office jobs decentralized from Central London during 1963—70 went to the development areas. It is unlikely that Office Development Permits, unless accompanied by large inducements, would alter this sufficiently to make great inroads into the existing requirements of the assisted areas.

The same is true, at least in the immediate future, of the dispersal of government offices from London. The Hardman Report (Cmnd 5322, 1973) recommended the movement of about 31,000 jobs, but only about 17,000 are destined for assisted area locations. Moreover, all the towns chosen as possible locations, with one exception, had or are planned to have, populations greater than 200,000. These are places which already have substantial office sectors and, compared with other parts of the assisted areas, fairly high female activity rates. Thus, although they are the most rational places to put new office employment, the dispersal process still leaves areas with the more serious problems relatively untouched.

(c) *Indigenous growth.* Recognition that industrial movement cannot be sufficient to meet the needs of the assisted areas has been followed, perhaps logically, by a shift of attention to the possibility of fostering indigenous growth in the assisted areas. There is, of course, an initial paradox to be overcome, namely that the past records of the ability of these areas to generate new companies and to expand their existing companies has been weak, largely because of their industrial composition. Thus, one needs on the one hand, a new composition to generate indigenous growth and, on the other, the prospect of indigenous growth to create a new industrial composition and a better climate for new companies and further expansion. Nevertheless, employment in indig-

enous industry has been fostered. The first major policy instrument to do this was the Regional Employment Premium, paid as a standard per capita labour subsidy. More recently, the 1972 Act introduced a new instrument — 'selective financial assistance' — which makes available loans and interest relief grants to new projects and expansions which create additional employment and to projects (e.g. modernization or rationalization) which safeguard existing employment. Selective assistance has also been made available outside these categories to cases where there is an imminent risk of significant redundancies unless help is provided (e.g. in shipbuilding). The effectiveness of selectivity will not become fully apparent for some years, but it is interesting to note that at least one of the regions applying it (Yorkshire and Humberside) has done so in a strongly entrepreneurial manner, attempting, in the words of the regional director of the Department of Industry, to establish 'profits centres' — industrial units with a complete spectrum of management and professional services, giving them autonomy in decision-making.

Although it is too early to judge the effectiveness of selective assistance, it is not unreasonable to suggest, that this, together with the other policy instruments, is unlikely to meet the requirements identified by Ridley. Even if policy in the present decade resulted in job creation at the rate claimed by Brown to have occurred in the 1960's, this would still leave a major discrepancy. Clearly, therefore, to meet the regional disparities objective, it is necessary to look to new approaches to augment the existing ones.

FUTURE POLICIES

The argument so far has led in one direction, namely that policy, as hitherto formulated, has been well served by its instruments, but that while, in turn, it has met some of the major aims, the leading socio-economic objective (removing regional disparities) has not been achieved. Nor, given the magnitude of existing requirements, is it likely to be achieved in the foreseeable future. One escape from such a dilemma would be to restate the objective, substituting a less ambitious goal than calculated by Ridley. However, while it might be economic realism to do so, taking into account the inevitability of some disparities arising from differences in industrial composition and relative location, it appears to be politically impracticable to suggest an explicit operational objective based on anything less than interregional equality.

Another approach would be to strengthen the instruments of existing policy. Moore and Rhodes (1973) have argued that this would not impose real resource costs on the economy but would, on the contrary, produce extra growth in GDP and, incidentally, lead to lower taxes in the more prosperous regions. However, this approach is constrained by bottlenecks of various kinds (e.g. the availability of mobile industry, the supply of skilled labour etc.) which impose a limit on the possible rate of development in the assisted areas. The third approach, and the one to which our analysis appears inexorably to lead, is to investigate the scope for new policies to *augment* the existing ones of industrial movement and, more recently applied, indigenous industrial development.

A number of alternatives have been put forward over the years. These include some which have been implemented, such as greater expenditure on infrastructure in the assisted areas and expenditure on environmental improvement. There are others, too, which are more tenuously based, such as the devolution of political power to the regions. But, whether any of these could have a substantial effect is open to question. There is, however, one further possibility which has been discussed in the past, but which has been dormant in recent years. This is the role of migration in regional development.

It might appear strange, in the light of the history of regional policy in Britain, to advocate more analysis of the role of migration. After all, the first policy applied in 1928 was concerned with no less than the encouragement of the movement of labour from the depressed to the more prosperous regions. For this purpose the Industrial Transference Board was set up and given responsibility for establishing re-training centres and giving grants and loans to would-be migrants. In the ten years of its existence it helped about 150,000 to move to other regions and even though this was a small proportion of total migration, it was nevertheless significant. But its main error (McCrone, 1969) was in considering migration to be the only solution to the regional problem. Perhaps it was because of this that the fruitless debate on whether "workers should move to the work, or the work to the workers" was conducted with such heat in the 1950's and early 1960's. Thus we find at the present time that labour mobility (occupational and geographical) occupies a very minor role in regional policy. In 1972 the capacity of government training centres was only 17,000 (though it is planned to grow to 100,000) and financial aid for migration of unemployed workers from assisted areas to other parts of Britain was given to only 7,500 (Salt, 1973).

However, it is clear that a number of questions about migration remain to be answered; a few are listed below.

(a) Between 1951 and 1970 the net average migration between the 10 standard regions remained fairly constant at about 60,000. Bearing in mind the great increase in aid to the assisted areas after 1960, it is worth asking why the overall trend in migration should have been so little altered. The 1960's did witness a more rapid rundown of basic industries in these regions than the 1950's, but this was to a large extent offset by increased industrial movement. On a simplistic level, therefore, the volume of migration in the 1960's might have been expected to have fallen. Hence it is important to investigate possible trends in the propensity to migrate.

(b) Although we can enumerate migrants, we lack an objective measure of what constitutes a large or small volume of migration. The accepted view in Britain has been that migration in the 20th century has deleterious effects on both the region of origin (due to a negative multiplier effect) and the region of destination (due to increased congestion). But, clearly, it is necessary to take account, on the one hand, of the job-creation effects of industrial movement to the assisted areas and, on the other, the precise destinations of the migrants. Looking closely at those destinations, it is far from clear that they add appreciably to congestion (which, in any case, is difficult to define and measure). A large proportion of migrants from central Scotland, for example, went to regions with a lower population density and even those going to conurbations

were offset by migrants leaving those areas. The measure is, of course, a subjective one. If it were decided to accommodate a much larger flow of population, there is no doubt that it could be done by changing the distribution of public investment.

(c) Although there is considerable knowledge of what leads to a decision to migrate and where to migrate to, there is much less knowledge about the constraints on migration (Welch, 1970). The information that we have tends to be very general, such as the relationships between movement and age, sex, occupation, education and so on. But this is insufficient to allow us to predict with confidence the outcome of changing conditions. For example, the North West Strategic Plan acknowledges a range in their forecast of population change in that region of between zero and 1·8 million by the year 2001, on a base population of under 7 million in 1971. The greater part of this margin of possible error is due to uncertainty about migration.

(d) Much of the migration which has occurred in the last two decades has been planned. This is mainly intra-regional movement from the conurbations to new towns and town expansion schemes. However, these are relatively straightforward exercises and the question which now presents itself is the degree to which flows of migrants can be "intercepted" by the creation of intervening opportunities in the form of growth centres. This situation is not directly analogous with that of the French *métropoles d'équilibre*, where the main migrant streams are from rural areas, but there is a good case for studying their experience as information becomes available. Even though the greater part of British migration originates in industrial regions and, hence, is more concentrated, the role of growth centres is worth investigating. In this context, the experience of the Central Lancashire New Town should be instructive.

These do not exhaust the possible list of questions, but they are sufficient to indicate one direction which policy-oriented research might take. We have not, of course, attempted to formulate a "migration policy"; this must await the results of research and, even then, taking account of political realities, such a policy might not be feasible. After all, a migration policy involves an element of planning for decline in certain areas. However, we would assert that a migration policy could give two important benefits: on the one hand, it could augment the effects of the existing distribution of industry policy and, on the other, it could introduce a greater freedom of choice for individuals to locate themselves.

REFERENCES

Brown, A. J. (1972): *The framework of regional economics in the United Kingdom.* Cambridge University Press, Cambridge.

Cameron, G. C. (1974): Regional economic policy in the United Kingdom. In: M. E. C. Sant, ed., *Regional policy and planning for Europe.* Saxon House, London.

Cmnd 2188 (1963): *Central Scotland: a programme for development and growth.* HMSO, London.

Cmnd 4942 (1972): *Industrial and regional development.* HMSO, London.

Cmnd 5322 (1973); *Dispersal of the Civil Service.* HMSO, London.

Diamond, D. (1974): The long term aim of regional policy. In: M. E. C. Sant, ed., *Regional policy and planning for Europe.* Saxon House, London.

Downs, A. (1957): *An economic theory of democracy.* Harper and Row, New York.

Foster, C. D. and Richardson, R. (1973): Employment trends in London in the 1960's and their relevance for the future. In: D. V. Donnison and D. E. C. Eversley, eds, *London: urban patterns, problems and policies.* Heineman, London.
House of Commons (1973): *Inquiry into location attitudes and experience.* Minutes of Evidence. Expenditure Committee (Trade and Industry Sub-Committee), 42, XVII. HMSO, London.
McCrone, G. (1969): *Regional policy in Britain.* Allen and Unwin, London.
Moore, B. and Rhodes, J. (1973): Evaluating the effects of British regional economic policy. *Economic Journal*, 83, 80—105.
Moore, B. and Rhodes, J. (1974): The benefits from regional economic policy in the United Kingdom. In: M. E. C. Sant, ed., *Regional policy and planning for Europe.* Saxon House, London.
Richardson, H. E. (1972): Optimality in city size, systems of cities and urban policy: a sceptic's view. *Urban Studies*, 9, 29—48.
Ridley, A. (1972): Regional policy—theory and practice. *Urban Studies Association Conference, Oxford* (unpublished mimeo).
Rhodes, J. and Kan, A. (1971): *Office location and regional policy.* Cambridge University Press, Cambridge.
Salt, J. (1973): Workers to the work? *Area*, 5, 262—266.
Sant, M. E. C. (1974): *Industrial movement and regional development: the British case.* Pergamon, Oxford.
Stilwell, P. J. B. (1972): *Regional economic policy.* London.
Welch, R. L. (1970): *Migration research and migration in Britain. Centre for Urban and Regional Studies, Occasional Paper* 14, Birmingham.
West, E. G. (1973): 'Pure' versus 'operational' economics in regional policy. In G. Hallett, P. Randell and E. G. West, eds, *Regional policy for ever?* Institute of Economic Affairs, London.
Wilson, T. (1973): British regional policy in the European context. *The Banker*, p. 168.

PART TWO

AGRICULTURE AND REGIONAL DEVELOPMENT

THE DELIMITATION AND CHARACTERIZATION OF AGRICULTURAL AREAS DEFICIENT IN PHYSICAL RESOURCES

by

T. BERNÁT

Regional development policy as an organic part of general economic policy fulfils a distinctive function, irrespective of the socio-economic system. This is due to the fact that a society exists and develops in a given geographical area, and interacts with its physical and economic environment.

Effective economic development and economic policy, able to define and execute such basic socio-political tasks as the development plans of the industrial, agricultural, and infrastructural sectors must be harmonized spatially within the context of regional policy. At the same time, regional development makes definitive demands on social and economic policies, and often serves as a prerequisite and means for their realization.

One of the chief difficulties in determining the requirements for territorial balance and in working out a territorial development policy stems from regional disparities in the economy and in the level of regional development. In a country such as Hungary, with unevenly advanced parts, a development policy or a regional growth model, which fails to take into account regional differences cannot be considered realistic. Increasing the productivity of labour, investment and consumption policies demand thoroughly different approaches in advanced and backward territories. A regional development plan, formulated on the basis of "average conditions" cannot be applied successfully in either advanced or backward districts.

It follows from this that in the formulation of regional development plans and in the elaboration of territorial models, the latter being intensely studied by Hungarian economic geographers, one must take into account the various solutions to the spatial problems of the differently advanced areas. Regional disparities in Hungary have brought about overcrowded agglomerations such as Budapest, depressed areas and backward agricultural districts deficient in physical resources.

PURPOSE OF THE STUDY

The needs outlined above prompted Hungarian organizations working on regional questions to categorize the agricultural area of the country according to economic level and especially to delimit those agricultural districts which have had their development arrested. The major questions which this study seek to answer and which are the key to further progress in the backward agricultural districts are the following.

1. Which are the agricultural areas that are deficient in physical resources

and arrested in their development? Which among them, have seen their development arrested to such an extent that from a socio-political point of view they require state intervention?

2. Can a functional relationship be demonstrated between poverty of natural resources, the level of agricultural production and, consequently, the income level of the population in such areas?

3. What are the characteristics and economic conditions of such areas? Following on from this, the study concentrates on the regional problems of Hungarian agriculture.

METHODOLOGY

The research topic outlined above demands a solid methodological basis which must embrace two aspects, namely the methods of measuring and assessing the causes of backwardness, and secondly the choice of territorial units and their typology, which on aggregation can characterize and generalize the level of production.

The correct standpoint seemed to be to reject the hypothesis that the underdevelopment of the given territorial units, i.e. the collectives, is solely the result of local soil and climatic conditions. Rather they were regarded as contributory factors to underdevelopment and their role in determining the agricultural level of such farms was therefore examined. The fact that the various natural factors of production, i.e. soil, climate, topography and hydrology, must be synthetized in order to gauge their effect on production further strengthens the case for a two-sided — physical and economic — examination.

The average goldcrown value[1] of the productive land of farm units was used as a surrogate for physical attributes i.e. soil and climatic conditions, while production levels were characterized by the use of nine economic indicators.[2] The absolute values of each indicator (Forints, hectares etc.) were ranked on a points scale from 1 to 9 and the values summed. Collective farms for which all ten indicators were regarded as most favourable were assigned ten points, and those for which the indicators were regarded as least favourable ninety points. Collective farms where the indicators ranged from 60 to 90 points were defined as farms of low productive level.

[1] The value of one hectare ranges from 1 to 45 goldcrowns and relates to net income reached with average production technology. Land of medium fertility averages 11 goldcrowns in value. This evaluation system, formulated at the end of the last century according to the monetary unit of the time, still forms the basis of land taxation. In it not only do soil and climatic factors find expression but, to some extent, the degree of intensification as well. In many respects, the system now requires revision, but as this study proves it is still a realistic objective yard-stick even today of the natural productivity of soils. The value of one hectare of productive land averages 17 to 18 goldcrowns.

[2] To determine production levels, we have utilized the following indicators: value of fixed and circulating assets per hectare, arable land per agricultural worker, livestock per hectare, input in standard man days per hectare, proportion of processing and auxiliary activities in total income, gross farm income of farms per hectare of arable land, annual revenue from the collective sector per active collective farm member, total saving (accumulation) per hectare of arable land by collectives, and total saving per active farm member by collectives.

The 3270 urban and rural administrative divisions of the country were taken as the territorial units of the study and the production level of each was characterized on the basis of the 1967—1968 data for 3032 collective farms.

THE GEOGRAPHICAL DELIMITATION OF BACKWARD AGRICULTURAL REGIONS

At least one third of the geographical area of Hungary is deficient in natural resources for both industry and agriculture.

The poorly endowed districts which comprise large contiguous areas occupy roughly one quarter of the country's agricultural land, and are farmed by 924 collectives or 30 per cent of the total. In these poorly endowed regions physical factors significantly restrict production or make it unreliable. Our investigation proved that the cause of economic backwardness in these regions is to be found in the poverty of natural resources.

Owing to the deficiencies of nature and to a price and tax system set for collectives operating under average natural conditions, farms in these territories are often unable to recoup their investment and thus work at a loss. As shown on the *map* (attached),[3] the majority of areas of unfavourable physical environment are relatively compact spatially, although a mosaic-like arrangement is fairly frequent. Some 47 districts of various sizes fall into this category.

The 47 districts are heterogeneous from the point of view of both physical environment and economic level, although the similarity of natural conditions affecting cultivation permits a degree of generalization and categorization. On the basis of the most important determinants — chiefly relief and soil conditions — the following five territorial types may be delimited.

(1) Northern Hungary, Central Transdanubia, and the Mecsek Highlands where slopes generally exceed 20 per cent.

(2) The hilly countries of Zala-Somogy and Northern Hungary, with slopes of 15 to 20 per cent and with stoney soils.

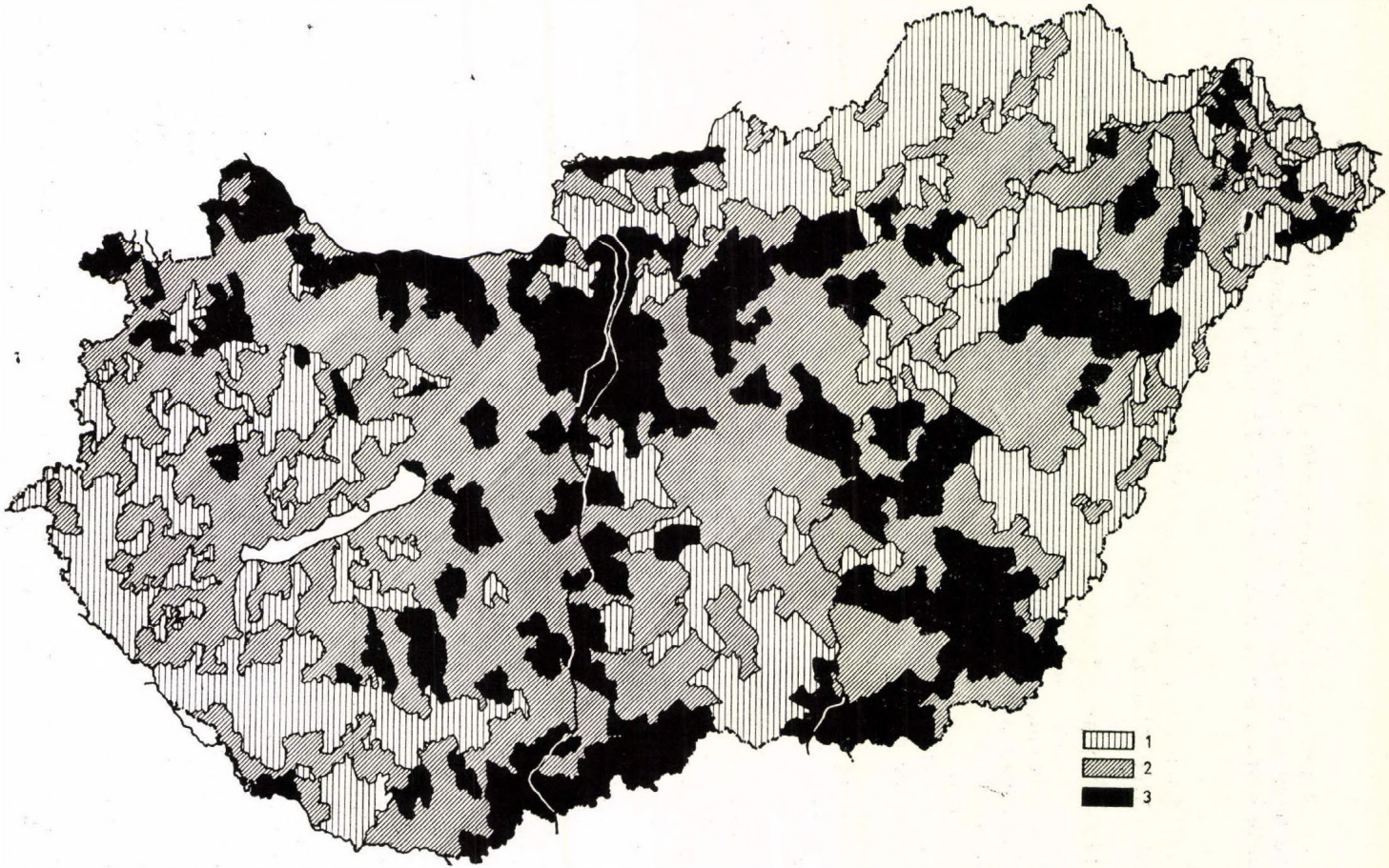
(3) The unfertile sandy areas of the Danube—Tisza Interfluve and the Nyírség.

(4) The heavy soils and marshy country of the Körös rivers, the flat-lands of Szatmár, the Ecsed marsh, Little Balaton and Nagyberek.

(5) The semi-productive and unfertile solonetz areas of the Hortobágy- and Tisza valley.

A common characteristic of the above five types is that adverse surface and soil conditions significantly restrict farming. Seventy to eighty per cent of agrarian districts with arrested economic development have poor soils, i.e. strongly acidic podzols, loose sand low in humus content, and solonetz, rocky and stoney soils. Mountainous and hilly country with steep slopes subject to erosion comprise 30 to 40 per cent of these areas. Also substantial are those areas where sub-soil conditions, and soil and sub-soil water adversely

[3] The map prepared on the basis of the economic indicators is almost identical with that drawn solely on the basis of physical endowments.



Regional differences of agricultural production in Hungary. 1 = low backward; 2 = average; 3 = above average

affect farming. Owing to the low productive capacity of the soils, the yields of these districts fall behind the national average by as much as 30 per cent and by 40 to 50 per cent behind the average for favourably endowed agricultural areas. Poor soils and steep slopes increase the inputs and production costs of cultivation which indirectly influence animal husbandry.

THE RELATIONSHIP BETWEEN NATURAL RESOURCES AND PRODUCTION LEVEL

Unfavourable natural conditions can be characterized by relief and soil quality. The poorly endowed agricultural areas are found chiefly, about 60 per cent of the total in the strongly eroded hills and uplands of Transdanubia and in the Northern Uplands. A further 10 to 20 per cent comprise the sodic soil areas of the sandridge of the Danube—Tisza Interfluve, the Tisza valley and the valley of the Körös, which suffer from groundwater and flooding. The different productive characteristics of three selected soil districts are given below.

Relationship between land quality, production value and personal income for three selected counties

County	Deviation		
	of land quality represented by cadastral income (goldcrown)	of production value per hectare	of personal income per agricultural worker
	from the national average		
Nógrád	—35	—25	—15
Borsod	—28	—32	—17
Zala	—24	—24	—28

One finds a strong correlation ($r = 0{\cdot}80$) between the quality of natural resources and production levels in the agricultural districts which have been arrested in their development. Evaluating this relationship, it can be stated that farms in areas with unfavourable physical environments do not have at their disposal the economic resources to enable them to exploit those opportunities that are present despite the natural conditions and which other collectives can utilize to improve their levels of cultivation. In other words, the yields from such farms are even lower than expected solely on the basis of adverse physical factors, which indicates that they are also deficient in other factors affecting the level of production such as capitalization and manpower.

Since agricultural production in such areas encounters below average natural conditions the range of enterprises is more limited than in more favourably endowed areas while yields are also lower. Indeed owing to the low production levels it is difficult to develop any rational land use at all in terms of reliable and efficient agro-cultures.

THE SOCIO-ECONOMIC CHARACTERISTICS OF AGRICULTURAL DISTRICTS DEFICIENT IN NATURAL RESOURCES

Approximately one third of the 750 thousand collective farm workers are employed in the areas suffering from environmental deficiencies. Thus, from a socio-political point of view, the relationship between cultivation and the living standard of the population in these rather extensive areas is important. Enjoying significant state support, the 924 collectives (1967) in these territories have made substantial progress during the last three years. They have managed to increase their production and income, and several of them now fall into the moderately efficient category.

Preferential state subsidies that compensate for the low incomes caused by differences in physical conditions have made a significant contribution to the advance of the poorly endowed agricultural districts. They appear frequently as a collective farm supplement and operate in agricultural areas where personal incomes do not exceed 15,000 Forints per year. Higher production levels and the low income supplements have resulted in a considerable reduction in the range of collective farm incomes, the income differential between farms with the most and the least favourable soil conditions declining from 70 per cent in 1969 to 25 per cent in 1972. During the last few years rational land uses have been developed and together with the increase in the number of side activities have contributed considerably to the improvement of farming levels. At present one third of the total number of collective farms (818 in number) are situated in districts with adverse physical conditions. During the last five years, owing to amalgamations, collective farms decreased in number by 700.

Despite the noticeable improvement, farming in these districts will long remain a major problem for regional development and agrarian policy in Hungary. In the agricultural districts with adverse physical conditions the level of production remains 25 to 30 per cent below the national average and this is accompanied by low living standards and conditions. Despite the diligence of the collective farm workers in these districts, production value gross income, funds for development and distribution as well as personal net income derived from the socialist sector remain some 20 per cent below the national mean. On a nation-wide scale about 36,000 agricultural workers, some 5 per cent of the total, receive incomes below 2,000 Forints[4] per month from the collective sector (1972 data). The great bulk of these 200,000 agrarian workers are members of collectives within these districts. The economic backwardness leads to a low level of service provision, a poor settlement network, and, in general, insufficient infrastructural facilities. All these cause serious social strain and the out-migration of population on a large scale; in all regions of the country internal migration between 1960 and 1970 most seriously depleted the population of the backward agricultural districts which lacked industrial activities.

[4] 50 Forints = one pound sterling.

The geography of agricultural areas deficient in physical resources can be described as follows.

— Soil fertility is much lower than in the other regions of the country. The soils are subject to water and wind erosion, and are of low fertility owing to their chemical and physical properties. Their water budget tends to be unbalanced even when precipitation is adequate and suitably distributed. Due to unfavourable climatic, soil and topographic conditions, unregulated drainage and flood dangers, agricultural opportunities are restricted and cultivation entails a much greater risk than in other areas of the country.

In the upland and hilly districts slope inclination and surface conditions are chiefly responsible for the low productivity of the strongly acidic forest soils which affect intermediate and final outputs. The low productivity of the soils of the Danube—Tisza Interfluve can be attributed to insufficient precipitation, as well as to soil properties, such as low humus content. The sodic soils covering some half a million hectares east of the Tisza and in the Tisza valley itself are difficult to cultivate and are therefore of low agricultural value.

These adverse conditions make for poor results irrespective of good or bad husbandry on the farms. (In general, areas enjoying a net income of less than 15 goldcrowns per hectare are taken as being poor in natural endowments.)

— The degree of fixed and circulating capital in these areas is, for the most part, below average despite the fact that an increase in production under such environmental conditions requires above average capitalization *(Fig. 1)*. In places, one finds a relatively high degree of capitalization but, almost without exception, this has been related to the expansion of fruit- and viticulture during the past ten years.

— In the majority of the agriculturally backward regions the density of

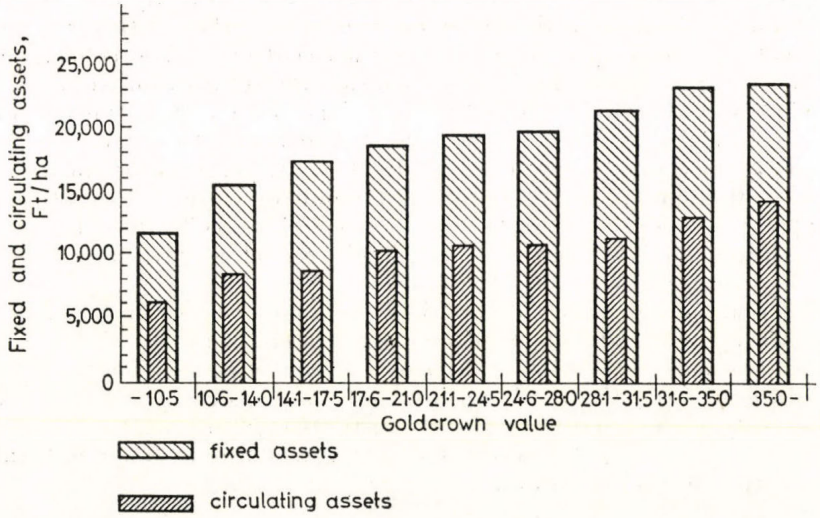


Fig. 1. Relationship between the goldcrown value representing the productive capacity of the soil, and fixed and circulating assets in 1972

agricultural population is low, but more important, the quality of the labour force is good. The problem of manpower is directly related to the economic level of cultivation and to variations in goldcrown value, despite the fact that in these regions investment in the form of labour is generally more economic than in the form of machinery. In the final analysis, therefore, the worse the physical conditions for cultivation the less favourable are the age and sex structures of the population and the organization and utilization of manpower. Though labour can play an important role in the economic stabilization of backward regions, such areas can neither retain their work force nor motivate it sufficiently owing to the low level of personal income. Consequently, both the annual input in labour days per active collective farm member (230—245 days) and the input per unit area also in labour days (30—37 days per hectare) remain well below the national average. From a socio-political point of view severe unemployment problems occur only where unfavourable physical conditions are coupled with either high densities of collective farm members, or with lack of opportunities in non-agricultural occupations. The Nyírség, the Danube—Tisza Interfluve, southern Little Cumania, and the Őrség are examples of such areas.

— About three-quarters of these backward agricultural areas are also regions of low animal densities measured in standard animal units.[5] Exceptions are the hilly parts where animal densities — especially cattle and sheep — are higher *(Fig. 2)*. However, these branches, which need high inputs and show low profitability influence the level of cultivation and economic stability in a negative manner. Animal husbandry helps in the formation of a more effective agriculture only where the incomes are from the more profitable pig and poultry enterprises.

— Returns from auxiliary activities such as industry and trade, while not eliminating the losses from agricultural production, can indirectly contribute to the development of a more rational economy and during the last two or three years have achieved an important role. In 60 per cent of the 924 collectives operating in areas with poor physical endowments the return from auxiliary, processing and service activities was less than 1 per cent of total income in 1970. In only 15 per cent of these collectives did the income from these activities exceed 8,8 per cent. However, during the last few years, state subsidies, especially tax allowances, have resulted in a dynamic increase in such returns and currently, some 34 per cent of the total income of the collectives in question is derived from auxiliary activities. Such high proportions are rarely found even in areas with the most productive soils.

— The gross income per hectare of agricultural land conveys most expressively the adverse economic effects of poor natural endowments. Using this indicator an especially close relationship can be established between the spatial distribution of restrictive environments and low gross revenues. The fact that the majority of the population of these districts must make a living from agriculture and that their future economic character will remain agricultural only, aggravates the problem *(Fig. 3)*.

[5] Measured in 500 kilogram units irrespective of breed.

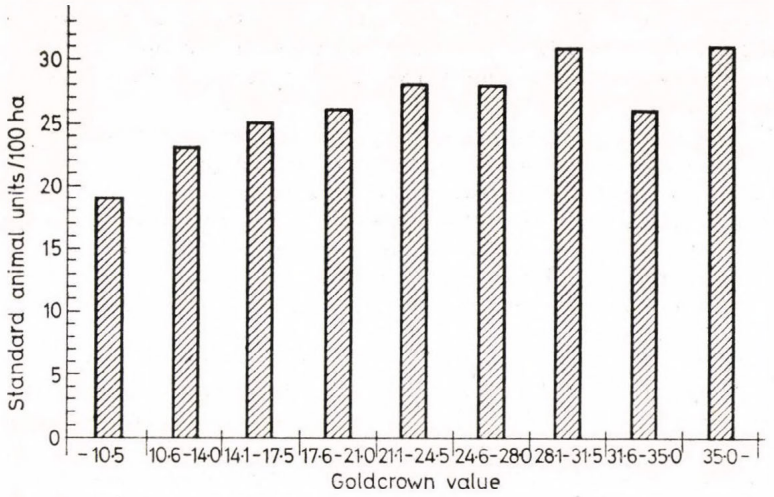


Fig. 2. Relationship between the natural productive capacity of soils (goldcrown value) and animal density 1972

— The income from the collective farm sector per active member, in general, remains below the national average: that is, poor physical conditions are coupled with low personal incomes. This is confirmed by the strong positive correlation ($r = 0{\cdot}81$) that exists between collective farm income per active member

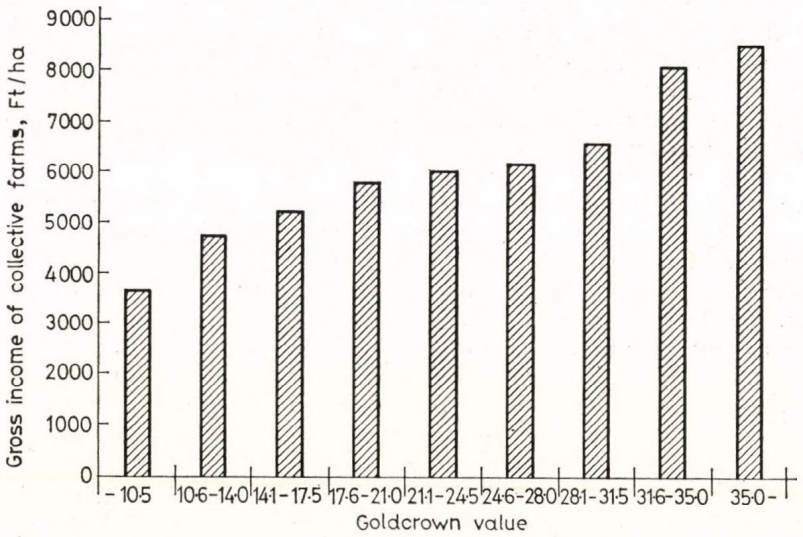


Fig. 3. Relationship between the natural productive capacity of soils (goldcrown value) and the gross income of collective farms 1972
Regional differences of agricultural production in Hungary
1 = low backward; 2 = average; 3 = above average

and the goldcrown value of the land. It also indicates that the per capita income from these collectives is lower than would be expected purely on the basis of physical endowments, and this is explained by other factors such as under capitalization.

Between 1969 and 1972, collectives operating in those areas that were least favourable environmentally increased their personal income by 72 per cent due to state subsidies and a more rational farming system, while collective farms in the most favourable areas could only attain half to one third of their former rate of growth. Consequently, the income gap between the two farming extremes is narrowing rapidly. This deliberate socio-political objective is realized in part by the collection of differential land rents organized through taxation (land tax and income tax).

— Regarding accumulation, some of the collectives operating in adverse environments are unable to replace capital stock from their own resources. Their annual investments of 1300 to 2200 Forints per hectare in buildings, machines and vehicles amount to only one third of the total investment of collective farms with high accumulation capacities operating in favourable environments. At least one third of this low sum services the renewal of depreciated capital stock. Thus, very moderate amounts are left for the expansion of production. The distribution of collectives with insufficient or nil accumulation is highly correlated ($r = 0{\cdot}95$) with the poorly endowed districts. The relationship is logical, since poverty in natural resources results in the inefficient economic performance of productive forces.

— The poor soil fertility and low technological level strongly restrict the evolution of a rational production structure, and low yields are coupled with high costs, although inputs per unit area increase as one moves towards regions of high fertility. The chief problem of these areas is that the effectiveness of labour inputs remains far below that of the better endowed regions.

In the agricultural collectives under discussion the stepping up of inputs — especially capital asset inputs — leads not to the elimination of economic backwardness but often to the intensification of already substantial economic difficulties and further retardation of their relative development.

At present in regions of unfavourable physical environment the input of labour is more economic than that of capital but more effective manpower utilization meets with great difficulties mainly because of the low level of personal incomes and lack of material stimulus. Naturally, the degree of effectiveness varies widely throughout such areas.

— Adverse natural conditions negatively influence not only the various categories of cultivation but also through indirect causal chains, other factors of the farm economy such as management and farm structure. At first this is the result of, but later the cause of, poor economic performance. All these factors working in combination mean that, on the one hand, very great differences arise between the economic performance of collectives with adverse and those with favourable environmental conditions, and, on the other, serious social stress develops owing to inequalities in personal incomes and living standards. The socio-political consequences of these economic problems become especially grave where adverse natural conditions are coupled with high agricultural densities, problems of manpower utilization and inadequate incomes.

The development of backward agrarian districts, an issue which goes beyond the aims of the present study, is not simply a question of material means. Our experiences show that a development programme which is economically ineffective and is merely restricted to supplementing incomes and providing state subsidies is not acceptable especially in the long-term, as such a programme would not only preserve backwardness, but would also slow down the growth of national income. Therefore, the development of these regions must be approached in such a way that besides socio-political goals, the requirements for economic effectiveness are also enforced. A prescribed degree of effectiveness then becomes obligatory.

REFERENCES

Bernát, T. (1968): Területi statisztika és gazdaságföldrajz (Regional statistics and economic geography). *Területi Statisztika*, 18, p. 241.

Bernát, T. (1969): Természeti erőforrások szűkössége miatt fejlődésben elmaradt mezőgazdasági területeink földrajzi körülhatárolása (The geographic delimitation of the Hungarian agricultural areas deficient in natural resources). Kézirat (Manuscript), Budapest.

Bernát, T. and Bora, Gy. (1971): Changes in the locational criteria of the different economic branches in Hungary. *Research Papers*, Dept. of Economic Geography and Regional Sci. Univ. of Economics "Karl Marx", Budapest.

Bernát, T. and Enyedi, Gy. (1968): A magyar mezőgazdaság területi fejlődésének néhány kérdése (Some questions of the regional development of Hungarian agriculture). *Földrajzi Értesítő*, No. 4.

Boros, F. (1970): A magyar gazdaság térbeli változásainak tendenciái (Trends of the territorial changes in Hungarian economy). *Földrajzi Értesítő*, 19, pp. 23—48.

Enyedi, Gy. (1970): Az Alföld gazdasági földrajzi problémái (Problems of economic geography of the Great Hungarian Plain). *Földrajzi Közlemények*, 18, pp. 177—196.

Enyedi, Gy. (1971): *A mezőgazdaság földrajzi típusai Magyarországon* (The geographic types of agriculture in Hungary). Akadémiai Kiadó, Budapest.

Gartner, G. J. (1968): Development policy for a low income farm area. *Canadian Journal of Agricultural Economics*, Ottawa.

Kóródi, J. and Márton, G. (1970): *A magyar ipar területi kérdései* (Regional problems of Hungarian industry). Közgazdasági és Jogi Könyvkiadó, Budapest.

Kulcsár, V. (1968): A mezőgazdaság területi fejlettségi szintjeinek összehasonlítása (Comparison of the standards of regional development in the agriculture). *Területi Statisztika*, 18, pp. 619—711.

Laczkó, L. (1971): Természeti erőforrásaink és a gazdaság szerkezete közötti kapcsolatokról (On the relations between natural resources and spatial structure of the Hungarian economy). *Földrajzi Értesítő*, 20, pp. 469—484.

Laczkó, I. (1973): *A hegy- és dombvidéki gazdálkodás ökonómiai alapjai* (The economic bases of highland farming.) Mezőgazdasági Kiadó, Budapest.
Az ország sajátos feltételekkel rendelkező területeinek vizsgálata. Vitaanyag (Study in the areas of Hungary with particular conditions. Material of debate). Témafelelős: Dr. Laczkó László. Országos Tervhivatal, Tervgazdasági Intézet, Budapest, 1974.

Pécsi, M. (Ed.) (1969): *Magyarország tájföldrajza, II. köt. A tiszai Alföld* (Landscape geography of Hungary, II. The Great Plain of Tisza). Akadémiai Kiadó, Budapest.

Pénzes, I. and Tóth J. (1971): Szeged vonzáskörzete (Attraction area of Szeged). *Földrajzi Értesítő*, 20, pp. 153—158.

Sárfalvi, B. (Ed.) (1971): *The Changing Face of the Great Hungarian Plain*. Akadémiai Kiadó, Budapest.

Tóth, J. (1972): A központi települések szerepe a Dél-Alföld népességének foglalkozási átrétegződésében és területi koncentrálódásában (Role of the central settlements in the professional restratification and territorial concentration of population in the southern part of the Great Plain). Kandidátusi értekezés (Manuscript), Szeged.

REGIONAL CHANGES IN THE AGRICULTURAL GEOGRAPHY OF GREAT BRITAIN, 1959—1973

by

J. T. COPPOCK

Despite the small size of Great Britain, there are major regional contrasts in its agricultural geography which show considerable stability over time. Nonetheless, the balance between farm enterprises is continually changing, both seasonally and from decade to decade. The annual variations may well be in opposite directions in successive years and may simply reflect farmers' reactions to the weather, the outbreak of disease or other random factors; they may be part of short-term changes, generally in response to variations in costs and prices; and they may also reflect trends over longer periods which are usually a response to much more fundamental causes. This paper first attempts to establish these regional contrasts in the early 1970s and, secondly, identifies the principal changes between 1959 and 1973. It is not primarily concerned with explaining these changes, but rather with showing how they have accentuated the broad regional contrasts, which are probably more marked than they have ever been. Finally, it is argued that such regional differences must be recognised in agricultural policies.

THE BACKGROUND

The physical geography of Great Britain necessarily imposes a degree of regional variation on British agriculture. The concentration of the higher, more rugged land in the west and north leaves little land suitable for cultivation. The heavier rainfall, greater cloudiness, lower temperatures and shorter growing season reinforce these tendencies, as does the distribution of soils; for the steep lapse rate in this oceanic climate ensures that the length of the growing and grazing seasons falls off rapidly with altitude, and the combination of recent glaciation, acid parent materials and heavier rainfall leads to poor, leached and often peaty soils. Of course, exceptions to these broad generalisations exist, as in the limestone heart of the Peak District, where there are extensive areas of cultivated land above 1,000 ft (300 m), or in the sheltered valleys of the eastern Pennines, where the limit of cultivation reaches 2,000 ft (600 m). In general, however, agricultural land above 1,000 ft is used as rough grazing, though this may extend to sea level on poor land in the wetter areas of northwest Scotland. The margin between improved and unimproved land has fluctuated and, while there are extensive areas of moorland which were cultivated in the past when the climate was generally better, by far the greater part of the one third of Great Britain which is rough grazing has been used in this way for centuries, and agriculture in such areas is largely confined to the keeping of hardy sheep and cattle.

In the lowlands, too, there have long been similar, though less marked contrasts, reflecting broadly the gradient of decreasing rainfall from west to east. In 1851, James Caird (Smith, 1953, p. 53) made a distinction between the corn and grazing counties of England, and this contrast between mainly arable farming in the east and mainly pastoral farming in the west has been a feature of English agriculture throughout the period for which statistics are available. A similar, though less marked contrast exists in Scotland, where the area of improved land is much smaller, the distinction between arable and grassland is less clear cut and the integration of stock and livestock more intimate; nevertheless, the eastern counties from Berwick to Angus stand in marked contrast to those such as Ayr on the western seaboard. While this contrast is strikingly revealed in the maps of the Land Utilization Survey (though, owing to differences of interpretation and of farm practice, the recording of arable and grassland north and south of the Scottish border is not strictly comparable), the broad regional contrasts in agriculture within the lowlands are less clear cut, partly because the physical constraints are less severe and can more readily be overridden should economic, strategic, or other considerations require, and partly because soil and rainfall can either reinforce each other, as with the higher rainfall and cold heavy land of the western half of the central lowlands of Scotland, or work in opposite directions, as in the areas of light soil in the West Midlands (though these are also in the rain shadow of the Welsh uplands and so have a lower rainfall than would otherwise be the case).

It seems probable that these regional contrasts in agriculture were less marked in the past when farmers were primarily concerned with subsistence. They were certainly less sharp in the period of high farming in the 1860s and were gradually accentuated during the long decline of British agriculture from the 1870s to the 1930s, when the extent of land under crops fell to the lowest acreage ever recorded and the sheep enterprise was abandoned on many farms in the lowlands, particulary in eastern areas where it was discouraged by the high cost of keeping sheep on arable land. There were, it is true, forces working in the opposite direction, particularly the wider adoption of dairying, a trend encouraged both by improvements in transport and, especially from the creation of the milk marketing boards in 1933, by marketing policies, which improved the return from dairying and, by providing an assured market, made dairy farming particularly attractive to small farmers. On balance, however, it seems that regional contrasts in the 1930s were as sharp as, if not sharper than, they had ever been.

Since 1939 there have been several forces at work sharpening or reducing these long-established regional contrasts. The change during the Second World War had followed the conventional pattern in that trends in any given enterprise were in the same direction throughout the country, although the rate of change differed; for example, in areas where most land was already devoted to crops, there was only a small increase in ploughed land, whereas the acreage under the plough in western counties increased many fold (Coppock, 1959). During the blockade of the Second World War, when it was necessary to produce as large a proportion as possible of the temperate foods consumed in the United Kingdom, trends in crop production were dramatically reversed and every field that could reasonably be ploughed and cropped was

brought into production. As a result of a policy decision to favour dairy cattle at the expense of other livestock, numbers of the latter fell steadily, while those of cattle continued to increase. In the postwar period, however, trends have been unusual in that they have been in opposite directions in different parts of the country.

Of course, in considering these regional changes, note must be taken of changes in productivity as well as of those in acreages of crops or numbers of livestock; both yields of crops and of livestock products and stocking densities have risen markedly during this period and it may be possible for production to increase even though the acreage under a given crop or the number of a class of livestock is declining (as with the production of blackcurrants in England or that of milk in Scotland). Nonetheless, even when due allowance is made, charges since the Second World War have tended to accentuate both regional and local contrasts.

THE REGIONAL PATTERN

The broad divisions discussed so far are, of course, only a pale reflection of the regional variety of farming in Great Britain and have tended to emphasise one aspect, land use. Even in that respect, the regional picture is much more complicated, as *Map 1* shows, for this map records by parishes the proportion of improved land under crops, as well as the main areas of rough grazing, and reveals the considerable local variations. Of course, the use of land is, for the most part, only a means to an end, for British agriculture is highly dependent on livestock and livestock products and most agricultural land provides grazing or fodder crops for their support. Nonetheless, individual crops and classes of livestock also show a considerable degree of localization, which tends to be higher with the minor crops and classes of livestock than with the major; thus, 70 per cent of the raspberry crop grown in the United Kingdom is found in two Scottish counties, Angus and Perth, and 64 per cent of the sugar beet is grown in the eastern region of England. In general, proportions of the major crops and livestock are lower, though more than two thirds of the Scottish dairy herd in 1973 was in southwest Scotland. *Maps 2 and 3* show the distribution in 1972 of four of the principal enterprises on British farms, viz., crops, the dairy herd, the beef herd and the sheep flock; these maps, too, have also been compiled from the parish summaries of the annual agricultural returns. Fifty per cent of the land in crops was in the three eastern regions of England (see Table II), with the highest values in and around the Fenland. The distribution of the dairy herd was more fragmented, with two major concentrations in the southwest peninsula (25%) and the northwest Midlands (16%), though 71 per cent of the dairy herd was to be found in western counties. For a variety of reasons (especially the fact that beef production fits in with many farming systems and is often not the major enterprise), the pattern of beef breeding was more evenly distributed, with particular concentrations in the Welsh borderland (especially Brecon, Hereford and Radnor), Northumberland and South Scotland, and northeast Scotland; thus, Scotland, Wales and North England together accounted for 76 per cent of all beef cows. Sheep keeping,

with the notable exception of Kent, was more clearly localized in and around the uplands, with Scotland, Wales, northern and southwest England accounting for more than 75 per cent of all sheep. Some confirmation of these figures is given by Table II which records, for each of the regions into which the agricultural departments group counties for administrative purposes, the proportion of each enterprise in that region, while maps and agricultural atlases of England and Wales and of Scotland show these tendencies in more detail and in much greater variety (Coppock, 1964, 1974a, b).

This brief analysis is, however, misleading for two reasons. First, although a high proportion of any crop or class of livestock is concentrated in a limited part of the country, most are nevertheless fairly widely distributed, so that apart from the uplands, most enterprises are found in most counties. Secondly, a concentration on the analysis of aggregated data ignores the fact that there are great farm to farm differences and that most enterprises are found on a minority of holdings, a tendency which has become steadily more marked over the past 25 years as farms have become more specialized. The regionalization of enterprises is thus much more patchy than appears from these maps.

Furthermore, enterprises do not exist in isolation; they form parts of farming systems which, because of the large number of enterprises and the considerable degree of localisation, are highly complex in character. Attempts to classify farms, using methods of numerical taxonomy, have shown that, while between 55 and 60 per cent of farms show a sufficient concentration on a given activity to be classified in a meaningful way, the remainder are not sufficiently distinct and are more appropriately classified as mixed farms. Attempts to classify regions according to farming types using the same methods have also not been very successful, but more satisfactory results were obtained when enterprises rather than farm types were used as the basis of classification. *Map 3* and Table I shows the results of such classification using eleven enterprises (dairy, beef, sheep, pigs, poultry, crops (other than cereals), cereals, fruit, vegetables, flowers, glass) for the 374 Agricultural Development and Advisory Services (ADAS) districts into which England and Wales were divided in 1970. Ten regional types (though not all occupied by each type are contiguous) were recognized, and their character is shown in *Table I*. It is true that the resulting regions broadly correspond with those which might have been derived intuitively, but they have the great merit of being the outcome of a rigorous analysis of the available data and being accurately defined in objective terms.

REGIONAL CHANGES 1959—1973

There is thus little doubt that there are considerable and continuing regional differences in agriculture throughout Great Britain, but the factors responsible are not fixed and unchanging, and there have been major changes in British agriculture in the past 35 years. It will be interesting, therefore, to examine the effect of such changes on the regional character of British farming. Since it is impossible to review all the main changes in a short paper, attention will be focussed on five major enterprises which have rather different distri-

TABLE 1

Regional types, by ADAS districts, 1970

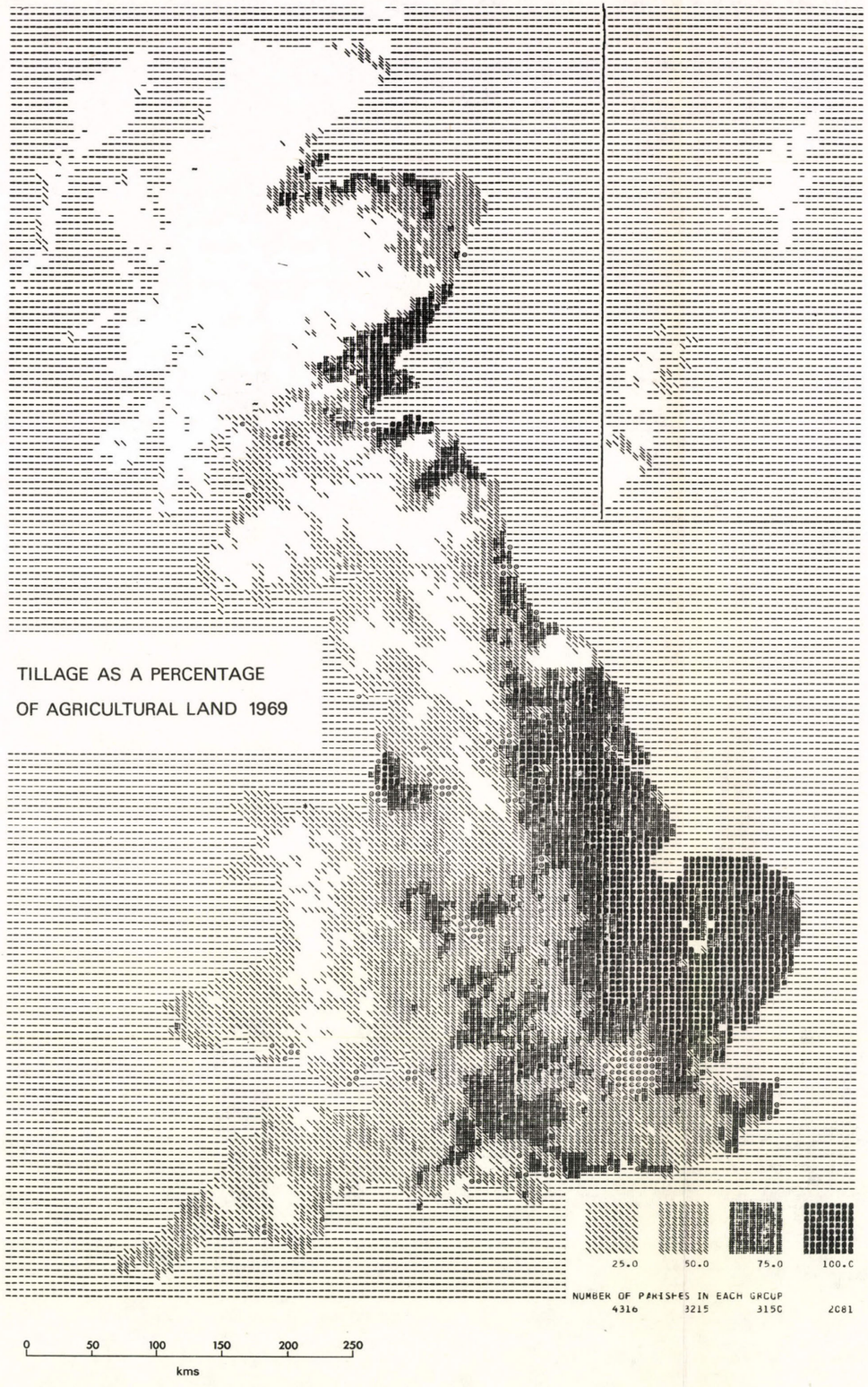
Type Enterprises	Type 1 Mixed Livestock	Type 2 Sheep	Type 3 Mixed	Type 4 Dairy	Type 5 Core dairy	Type 6 Cereals	Type 7 Cropping	Type 8 Glass-houses	Type 9 Vegetables	Type 10 Fruit
	Per cent of all standard man days in each region									
1. Dairy	27·8	34·5	31·8	50·8	68·6	13·0	4·2	13·7	5·0	11·4
2. Beef	25·0	23·7	13·3	14·7	11·1	8·5	4·3	4·7	3·5	6·6
3. Sheep	28·2	51·4	5·9	10·0	3·0	2·8	1·1	0·9	0·8	6·1
4. Pigs	2·4	1·3	6·1	4·2	4·1	8·4	5·1	6·0	4·1	3·7
5. Poultry	3·8	1·7	10·7	5·4	4·3	8·2	5·5	5·5	4·9	4·4
6. Cereals	6·0	2·8	14·8	7·0	4·6	23·1	17·0	10·2	10·8	8·6
7. Crops (other than cereals)	4·3	3·6	6·0	3·9	1·7	22·7	38·8	6·4	17·3	20·5
8. Vegetables	0·7	0·2	3·6	1·0	0·5	5·7	12·2	6·3	25·9	6·0
9. Fruit	0·7	0·1	1·8	0·5	0·6	2·6	4·4	1·2	3·2	25·1
10. Flowers	0·4	0·3	2·0	0·7	0·5	1·7	5·4	6·6	13·4	4·5
11. Glasshouses	0·6	0·4	3·8	1·7	0·8	3·1	2·0	38·7	11·5	4·4
No. of districts	34	18	102	75	26	64	22	6	11	16

butions, namely crops, dairy cows, beef cows, other male cattle 1 year old and over, and sheep, and on the period 1959—1973 which has been chosen partly because of availability of data and partly because it illustrates the contrary trends.

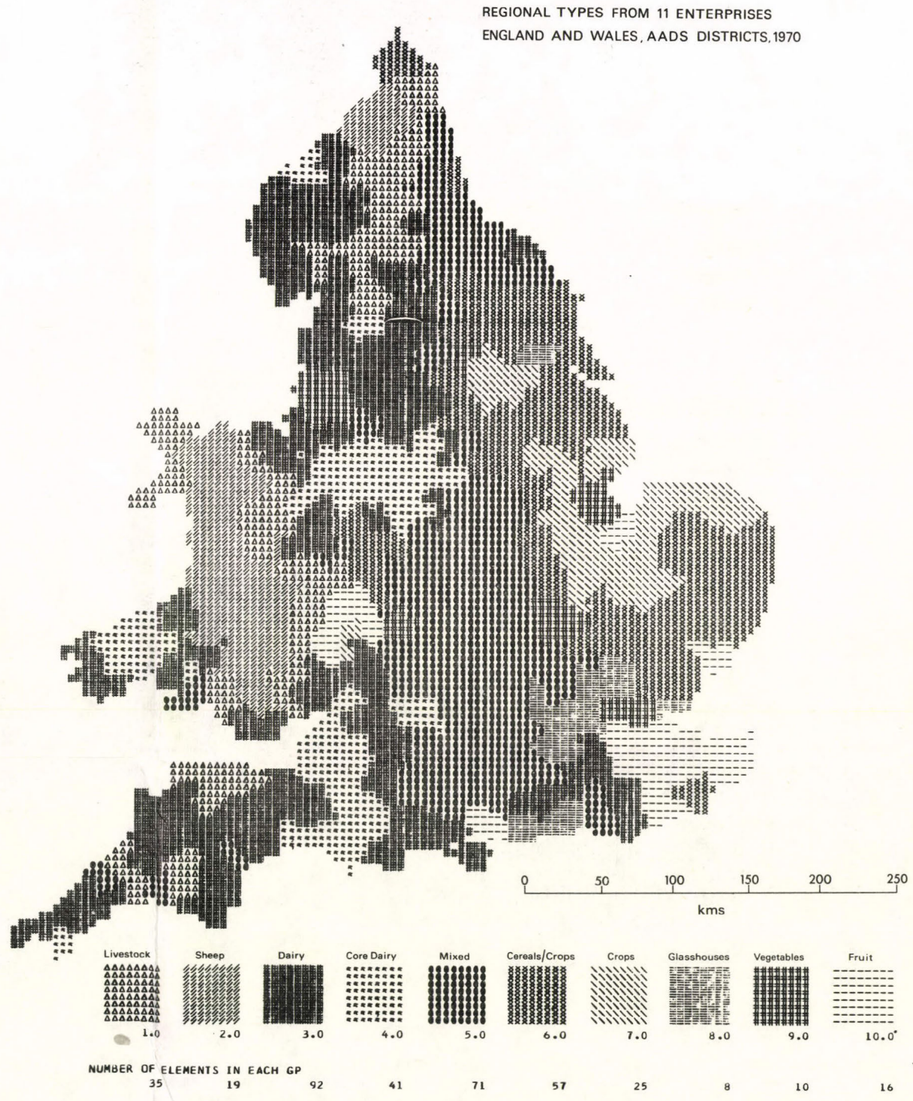
Changes in the acreage under tillage (crops and fallow) provide an interesting example of this tendency *(Map 4)*. After the Second World War, with the removal of controls over cropping, the acreage under tillage began to decline from the wartime peak of 13·7 million acres (5·5 million ha). The decline was most rapid in western counties where conditions were least suitable for crop production and was slow in the east. From about the mid-1950s the acreage of tillage in eastern counties began to increase once again, largely to accommodate increased production of cereals, though elsewhere it continued to fall. In 1960 the acreage of tillage in Great Britain as a whole began to rise, but the rate of increase in eastern counties diminished, since there was by then little ploughable land which was not already under crops; much of the increase thus came from the midland counties of England, while the tillage acreage continued to decline steadily in southwest England, in Wales and in southwest Scotland. Thus, whereas eastern counties recorded average increases over the fourteen years from 1959 to 1973, there was considerably less tillage in all western counties (though in interpreting distributions in Scotland it should be noted that county values for Inverness, Ross & Cromarty and Sutherland, each of which spans the mainland, are often influenced by the small area of improved land along the eastern seaboard). In the English Midlands, on the other hand, the rate of increase was consistently above the national average and there was at least 25 per cent more land under tillage in 1973 than in 1959.

Cattle, of which numbers increased by approximately 25 per cent over the same period, show similar divergent trends, for whereas numbers fell in eastern counties from Essex to Lindsey, most other counties in eastern England showed a less than average increase and nearly all western counties an above average increase, especially in southwest Scotland, southwest Wales and southwest England (see Map 4). As a result, regional contrasts have been sharpened rather than reduced.

The treatment of cattle as a single class of livestock hides important changes among the different kinds of cattle, three of which are considered here, namely, other male cattle 1 year old and over (a census category comprising mainly cattle being fattened or intended for fattening for slaughter as beef), beef cows and dairy cows *(Map 5)*. Government encouragement of beef production, partly by price guarantees for fat cattle and partly by a subsidy to encourage the retention of calves suitable for beef, has led to an increase in the number of cattle 1 year old and over, averaging 17 per cent over Great Britain as a whole. In part this increase is due to an expansion of the beef breeding herd and in part to the reduction in the numbers of calves from the dairy herd which were slaughtered shortly after birth. The increase was most marked in the 1940s and 1950s and was rather less than for cattle as a whole over the period between 1959 and 1970. The pattern of change in this enterprise was more complex, for whereas the English lowlands (which include some of the most important areas for the fattening of beef cattle, such as the pastures of the

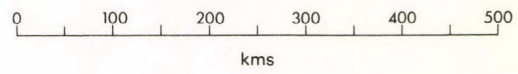

TILLAGE AS A PERCENTAGE
OF AGRICULTURAL LAND 1969
25.0
50.0
75.0
100.0
NUMBER OF PARISHES IN EACH GROUP
4316
3215
3150
2081
0
50
100
150
200
250
kms

Map 1


REGIONAL TYPES FROM 11 ENTERPRISES
ENGLAND AND WALES, AADS DISTRICTS, 1970
0
50
100
150
200
250
kms
Livestock
Sheep
Dairy
Core Dairy
Mixed
Cereals/Crops
Crops
Glasshouses
Vegetables
Fruit
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
NUMBER OF ELEMENTS IN EACH GP
35
19
92
41
71
57
25
8
10
16

Map 2

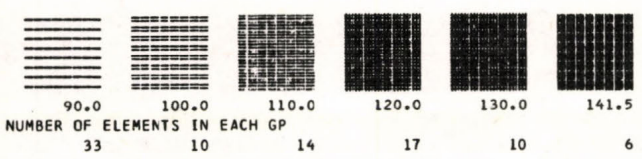
Major Enterprises 1971



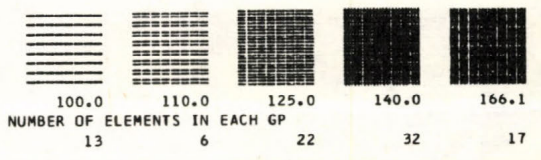
Map 3

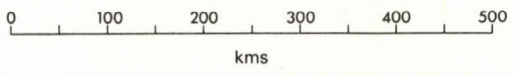
Major Changes 1959 – 73

Tillage



Cattle





Map 4

Livestock Changes 1959 – 73

Other Male Cattle 1 yr +

85.0	100.0	115.0	130.0	145.0	243.8
NUMBER OF ELEMENTS IN EACH GP					
17	11	7	24	12	19

Beef Cows

100.0	140.0	180.0	240.0	360.0	975.3
NUMBER OF ELEMENTS IN EACH GP					
5	12	30	23	11	9

0 100 200 300 400 500

kms

Dairy Cows

80.0	100.0	115.0	120.0	157.6
NUMBER OF ELEMENTS IN EACH GP				
23	23	20	9	15

Sheep

80.0	100.0	120.0	146.8
NUMBER OF ELEMENTS IN EACH GP			
18	34	29	9

Map 5

East Midlands) show average increases, there were declines both in parts of the uplands (especially the Grampians) and in eastern England; by contrast, most western counties recorded above average values, especially the principal dairying areas of southwest Scotland, southwest England, the northwest Midlands and southwest Wales.

The number of cows in the beef breeding herd rose by an average of 91 per cent, a much greater increase than that of other male cattle, and the pattern of change is somewhat different; for the areas of greatest increase were in southwest Scotland and, to a lesser extent, the uplands of southern Scotland generally, northern England and Wales, all of which showed above-average increases (see Map 5). Such a distribution is understandable, in that until 1968 incentives to encourage farmers to keep beef breeding herds were confined to the Hill Cattle Subsidy, payable on hardy cattle kept on poor hill land; in that year the Beef Cattle Subsidy was introduced to encourage beef breeding on poor land in the lowlands. It is, unfortuntely, not possible to be sure from county data how far such breeding herds were on upland farms, though it is noteworthy that large increases have also occurred in the mainly lowland dairying counties, such as Cheshire. By contrast, in the principal counties for the production of crops, from Cambridgeshire to the Humber, numbers actually fell and increases throughout lowland England were below the national average, both in areas which had had relatively few breeding cows and in others where they were previously important. Similar trends are observed in southwest England and in most of the Highlands, though the principal breeding areas, such as northeast Scotland, Northumberland and the Welsh borderland, recorded increases just above average.

Changes in the distribution of the dairy herd were rather difference (see Map 5). Although the increases for the whole of Great Britain were only 12 per cent, this and higher yields from dairy cows (rising from 735 and 744 to 900 and 882 gallons per cow between 1959—60 and 1972—3 in the Milk Marketing Board and Scottish Milk Marketing Board areas respectively) has led, through the milk marketing schemes, to reductions in the average prices received by farmers. As a result, farmers have tended to give up dairying, especially in those counties where other enterprises were possible. Numbers have tended to fall in two very different kinds of areas, the eastern arable counties (where, in England at least, there is an increasing number of farms without any grazing livestock) and the uplands of Wales and Scotland where the rearing of beef animals has become increasingly popular. Indeed, numbers of dairy cows had been falling in Scotland since 1962 and nearly every county, whether lowland or upland, shows the same trend. In England, on the other hand, numbers have generally been rising in the lowlands (other than in East Anglia), with the highest rates in the main dairying areas, especially in the southwest peninsula and the northwest Midlands. No doubt this difference in trends north and south of the Border is in part due to the major role which the dairy herd in England and Wales plays in the supply of calves for rearing and fattening for beef. Friesian cows, which are the main breed of dairy cattle in England and Wales, produce calves which can be reared and fattened for beef, especially if they are mated with a beef bull such as the Hereford, whereas the main breed in Scotland, the Ayrshire, is generally recognized as less suitable

for beef. Moreover, milk is controlled by different marketing boards in Scotland and in England and Wales, and each area is self-contained for milk marketing; with the Scottish market only a tenth as large as that in England and Wales (and with a lower consumption per head), it is not surprising that dairy cows should be less numerous than beef cows in Scotland, whereas in England and Wales dairy cows outnumber beef cows by six to one.

The number of sheep changed little between 1959 and 1973, though this statement conceals some fluctuations in the intervening years (see Map 5). Nevertheless, despite this apparent stability, there has been a marked fall in the number of sheep in eastern arable areas, though numbers were already small by 1959, and the decline continues a long-established trend. Numbers have also fallen throughout most of the remaining lowlands, except in the chalklands of southern England; on the Welsh borderland and throughout most of Scotland, too, there has been a net reduction. In upland Wales, on the other hand, numbers of sheep have risen considerably. The result of these changes has been a further concentration of sheep enterprises in the uplands, especially in Wales, encouraged by the Hill Sheep Subsidy, payable on ewes of hardy breeds kept on hill and, since 1968, also payable at half rate on cross-bred flocks on the upland margins.

All these changes are summarized in *Table II* for the twelve regions used by the agricultural departments. These regions are groups of counties and hence somewhat heterogeneous, so that the contrasts between the different agricultural regions are necessarily somewhat blurred. Nevertheless, they provide a convenient quantitative summary of the major differences and confirm the general trend towards greater concentration in those areas where the enterprise is most important. The main effect of these changes has been to enhance the degree of regional specialization in British agriculture, whether the enter-

TABLE II

Regional changes in the principal enterprises

Region	Tillage		Dairy cows		Beef cows		Other male cattle 1+		Sheep	
	1959	1973	1959	1973	1959	1973	1959	1973	1959	1973
Highland	1·1	0·8	0·9	0·5	6·6	5·8	1·4	1·0	8·9	7·6
N. E. Scotland	4·9	3·8	1·6	1·3	10·8	10·6	8·4	9·8	4·0	3·4
E. C. Scotland	3·6	3·5	1·2	1·0	6·0	5·4	4·6	4·2	4·3	3·9
S. E. Scotland	2·4	2·5	0·8	0·5	4·2	4·4	2·4	2·4	6·2	5·2
S. W. Scotland	2·5	1·6	7·9	6·7	4·1	10·3	4·1	5·2	8·2	7·9
E. England	25·6	26·4	5·6	4·2	4·6	3·0	8·9	5·0	1·8	1·1
S. E. England	12·0	12·4	10·6	9·6	5·9	5·4	7·7	8·8	5·5	4·9
East Midlands	12·9	14·8	6·7	6·7	7·4	4·7	12·1	10·6	5·4	4·4
West Midlands	7·6	8·1	14·5	15·4	8·9	7·1	9·0	10·0	7·5	7·2
S. W. England	9·7	9·4	22·1	25·3	13·5	11·6	12·2	15·5	9·4	9·8
N. England*	13·6	14·3	16·5	17·4	14·3	16·5	19·6	17·5	19·4	20·0
Wales	3·2	2·3	11·5	11·6	13·5	15·2	9·6	10·0	19·5	24·3
Great Britain	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

Source: Agricultural Censuses

* includes Yorks and Lancs. Region.

prise in question was experiencing a decline, expanding or stable, with the enterprise declining in those areas where it was already least important and showing a higher degree of localization than it did before. As has been noted, a similar trend is apparent in the degree of specialization on farms, with a reduction in the number of enterprises per farm, while the farms themselves are tending to get larger.

The factors responsible for these changes — the long-continued encouragement of beef production, the saturation of the market for liquid milk, the increased pressure on farmers' profit margins, the economies of scale on arable farms, the lack of alternatives on hill sheep farms — are complex and cannot be discussed here. Yet this marked and increasing regionalization does pose questions whether agricultural regions might not form a better framework for advisory work and research than types of farm and whether agricultural policy should not have a much stronger and explicit regional component. With the exception of the Hill Sheep and Hill Cattle Subsidies, agricultural policies have been applied fairly uniformly throughout Great Britain (apart from minor differences between Scotland and England and Wales), yet it is increasingly clear that a decision to encourage or discourage the production of a particular commodity, such as milk, has regional implications within agriculture and in the rural economy of which agriculture is part, a factor which must have some consideration in the regional policies being formulated in Brussels for the European Economic Community. Such changes also have implications for regional inter-dependence, especially in relation to store stock and fodder crops, which any proposals for decentralizing decision-making, as envisaged in the report of the Royal Commission on the Constitution, must also take into account.

ACKNOWLEDGMENT

This capter has been prepared as part of a research project financed by the Social Science Research Council, using data provided by the Ministry of Agriculture, Fisheries and Food and the Department of Agriculture for Scotland. The author is very grateful to these bodies and to Mr. K. E. Anderson, Research Fellow in the Geography Department, University of Edinburgh, who prepared Table I, and Mr, J. McG. Hotson, who prepared the maps.

REFERENCES

Coppock, J. T. (1959): The changing arable in England and Wales 1870—1956. *Tidj. Econ. Soc. Geog.*, 50, pp. 121—30.
Coppock, J. T. (1964): *An Agricultural Atlas of England and Wales.* Faber & Faber, London.
Coppock, J. T. (1974a): *An Agricultural Atlas of England and Wales.* 2nd edn., Faber & Faber, London.
Coppock, J. T. (1974b): *An Agricultural Atlas of Scotland.* David and Charles, Newton Abbot
Smith, W. (1953): *An Economic Geography of Great Britain.* 2nd edn., Methuen, London

LIST OF MAPS

Map 1. Tillage as a percentage of agricultural land, 1969

Map 2. Regional types from 11 enterprises, England & Wales, AADS districts, 1970

Map 3. Major enterprises, 1971. The figures in the keys show the percentage of all standard man days (smds) in that enterprise, by parishes

Map 4. Major changes, 1959—1973. The figures in the keys show the percentage change in the area under crops or in the number of each class of livestock, by counties

Map 5. Livestock changes, 1959—1973. The figures in the keys show the percentage changes in the number of each class of livestock by counties

A REGIONAL SUBDIVISION OF THE AGRICULTURE OF HUNGARY

by

Gy. ENYEDI

PURPOSE OF THE STUDY

The present paper focuses on the delimitation of agricultural regions with homogeneous economic characteristics and production structures, which may be treated as uniform regions for the purpose of regional development policy. The study aims at the scholarly examination of the factors underlying long-range planning.

As one may establish different objectives and consider various criteria in regionalization, it is stressed that the regional subdivision presented here is only one of many possible alternatives and is not meant as criticism of earlier conceptions.[1] It was also not the aim to develop complex agricultural regions. A new regional subdivision was deemed necessary because an analysis of production structure does not offer an appropriate foundation for regional planning. Homogenous production structures, for example an orientation of wheat, maize and hogs, may develop under very different economic conditions. Our aim was to present a regional subdivision which expresses at the same time both the economic conditions and structure of farming.

METHOD OF ANALYSIS

Each regional unit was characterized by twelve variables. In order to reduce the number of variables, factor analysis was used and a typology of regional units was established on the basis of factor scores.

For some decades factor analysis has been known as a statistical method, but it is only since the 1960's that it has been widely employed in establishing geographical typologies and regional subdivisions (Berry, 1961, Henshall and King, 1966). Although there is no single up-to-date method of establishing geographical typologies factor analysis suited our purpose because of the availability of computer programmes.

[1] Since the 1930's several regionalization projects have been prepared in Hungary reflecting the general territorial differences of agricultural production. The author has also made a number of regional subdivisions: the first project was published in 1955 and concerned the structure of gross production value of the South-Eastern Great Hungarian Plain; the second one referred to the whole territory of the country and was published with T. Bernát in 1961; the third regional project of 1964 relied upon the variances of per hectare gross production and production for the market.

DATA COLLECTION

1. *Choice of variables.* Comprehensive, synthetic variables were chosen because the foundation of a regional development policy does not require such details as, for instance per hectare fertilizer consumption, and the proportion of land under sugar beet. The establishment of synthetic variables was possible because the large-scale farms, occupying some 94 per cent of the total agricultural area of Hungary, keep detailed accounts. Due to their synthetic character, it was possible to use a limited number of variables without sacrificing the details.

The twelve variables are as follows:

Variable 1, x_1 = goldcrown value per hectare[2] of agricultural land;
Variable 2, x_2 = agricultural land per agricultural earner (in hectares);
Variable 3, x_3 = total value of all assets per hectare of agricultural land (in forints);
Variable 4, x_4 = animal units per 100 hectares of agricultural land;
Variable 5, x_5 = standard man days (ten-hours) per hectare of agricultural land per year;
Variable 6, x_6 = accumulation per hectare of agricultural land (in forints);
Variable 7, x_7 = accumulation per agricultural earner (in forints);
Variable 8, x_8 = gross income per hectare of agricultural land (in forints)[3];
Variable 9, x_9 = personal income per agricultural earner per year (in forints);
Variable 10, x_{10} = percentage of crops in total production for the market;
Variable 11, x_{11} = percentage of animal husbandry in total production for the market;
Variable 12, x_{12} = percentage of non-agricultural activity in total production for the market.

Since the data refer to *collective farms* which occupy some 80 per cent of all agricultural land, they do not comprise the whole of Hungarian agriculture. In many cases the farming units belonging to state farms are quite distant from one another, and data for them are therefore difficult to localize. In addition, they tend to fulfill special tasks such as the improvement of varieties and experimentation with and introduction of new technology, which aggravate the comparison of state and collective farm output. Since collective farms everywhere occupy the bulk of the cropland, the results of collective farm studies may be treated as referring to the whole of the agriculture of the country.

Variables were analyzed in respect of one year only, namely, 1969, but the data are considered representative of agriculture as good average yields

[2] The system of land evaluation which served as the basis for land taxation.

[3] Precisely, gross income minus the payment of tax, credit and social insurance comprises the net income of a large scale farm. This consists of three parts: 1. accumulation, 2. social and cultural funds, and 3. the personal incomes of collective farm members (or wages of state farm workers and employees).

were produced in that year and no part of the country suffered from floods or drought. Unfortunately, the calculation of five and ten year averages was impossible as the collective farms tended to change their accounting system every year and data for the selected variables were only available for one other year, namely 1968.

2. The 3016 collective farms existing in the country in 1969 were taken as *the standard regional units*. Where as previously, regional projects have been based on average data for administrative areas, this time it was decided not to aggregate the standard units into larger areas, because small units are able to represent more precisely the geographical distribution of the variable under consideration.

3. The *data matrix* is quite large, consisting of 3016 horizontal rows and 12 columns, that is 36,192 units of information. Typologies derived from factor analysis, as is shown by the literature, operate generally with fewer regional units and more variables. This is most likely explained by the fact that in most countries agricultural statistics do not contain the synthetic indices used in this study and typologies must therefore be approached by way of more detailed information. An ICL System-Type 4/50 computer was used to run the factor analysis programme.

RESULTS OF THE FACTOR ANALYSIS

Regression analysis was employed as a first step in order to discover the interrelationships among the variables. A simple correlation matrix was produced but as the principal correlations find expression in the factors, it is not described here.

The eigenvalues derived from the correlation matrix are proportional to the total variance explained by each factor. Here are quoted only the first four positive eigenvalues which account for over 90 per cent of the common variance in the initial data set.

Eigenvalue	Per cent of variance explained	
	Single	Cumulative
$\lambda_1 = 3{\cdot}641$	43·4	43·4
$\lambda_2 = 1{\cdot}764$	21·0	64·4
$\lambda_3 = 1{\cdot}387$	16·5	80·9
$\lambda_4 = 0{\cdot}924$	11·0	91·9

It is on this basis that we conclude that the regional distribution of the twelve original variables can effectively be expressed in terms of four principal factors.

In the next step, the factor loadings were calculated in order to show the correlations between the principal factors and the initial variables.

The loading on the first four factors are represented by the following matrix:

Variables	Principal factors			
	F_1	F_2	F_3	F_4
1. (goldcrown per hectare)	—0·476	—0·243	—0·197	—0·144
2. (hectares per agricultural earner)	0·330	0·550	0·211	0·336
3. (value of assets per hectare)	*—0·795*	—0·164	—0·033	—0·101
4. (animal units per hectare)	—0·178	—0·004	—0·203	—0·230
5. (standard man days per hectare)	—0·576	—0·275	0·180	—0·171
6. (accumulation per hectare)	*—0·816*	0·117	—0·179	0·170
7. (accumulation per agricultural earner)	—0·522	0·470	—0·373	0·445
8. (gross income per hectare)	*—0·831*	—0·128	—0·044	—0·039
9. (personal income per agricultural earner)	—0·583	0·013	—0·315	0·066
10. (crop production per cent)	0·204	*—0·834*	—0·088	0·500
11. (animal husbandry per cent)	0·317	0·222	*—0·679*	—0·448
12. (non-agricultural activity per cent)	—0·445	0·551	*0·698*	—0·023

(The loadings in italics indicate the significant correlations between the factors and the variables.)

A further useful measure is the communality of a given variable (h_j^2), which shows the proportion of the total variance of the given variable explained by the common factors. It is obtained by the addition of the squares of the loadings and is shown below for the twelve initial variables.

Final communality estimates

Variables	h_j^2	Variable	h_j^2
1.	0·348	7.	0·814
2.	0·603	8.	0·708
3.	0·665	9.	0·449
4.	0·133	10.	0·979
5.	0·473	11.	0·795
6.	0·739	12.	0·981

The final stage in the analysis in the calculation of the factor scores for each standard unit.

INTERPRETATION

1. The first factor accounting for 43·4 per cent of the common variance, is most closely correlated with variables 8., 6. and 3., that is, with gross income, accumulation, and value of assets per hectare. Since accumulation is being converted into production, factor F_1 can be termed the *factor of income and asset supply*.

The second factor (F_2) is closely correlated with the share of crops in agricultural production, and the third (F_3) with the share of animal husbandry and non-agricultural activity. Factor F_4 does not correlate significantly

with either variable. Thus, factors F_2 and F_3 classify the regional units according to the structure of production.

2. Factor F_1 is obviously related to the agriculture of a developed country, although it must be noted that the technical level of Hungarian agriculture has only advanced very recently. However, by 1969, seven years after collectivization, farming level was already determined by the supply of assets rather than by labour inputs that had been the determinants previously.

It must be concluded that land quality does not show a significant correlation with any factor. Indeed, the common factors together explain only 34,8 per cent of its variance. Previous calculations pointed to the prominent role of land quality in extreme cases namely, those relating to either a very high or a very low farming level (Bernát and Enyedi, 1968).

3. Crop production (F_2) determines the structure of agriculture. It is the main branch of Hungarian agriculture, producing 55 per cent of gross output and also serves as the basis for animal husbandry. Grassland is of small importance.

4. The personal incomes of collective farm members do not exactly reflect the level of farming: the four principal factors explain only 44·9 per cent of the variance in personal income. Individual farms differ greatly in their income and investment policies; in the short run, high incomes can also be attained by slowing down investment.

REGIONAL TYPOLOGY AND DISTRIBUTION

A collective farm typology has been constructed on the scores of the first two principal factors F_1 and F_2 because, after all, the proportion of crop production (F_2) determines the total structure of production. The type is determined by factor F_1, while factor F_2 permits the establishment of sub-types within this. The factor score intervals have been decided subjectively, the criteria used here being the need to avoid over detailed differentiation, and to develop a typology that can be used for national planning. Accordingly, six types are recognized on the basis of the scores on F_1; each type is divided into 4 sub-types on the basis of F_2, making 24 sub-types in all.

The scores on factor F_1 are inversely related to the supply of assets, accumulation and gross income (per hectare) of the farm. Thus a high negative score on F_1 indicates a good supply of assets, high accumulation and high gross income.

The scores on F_2 were grouped and interpreted as follows:

1.	−0·8	very high supply in assets and income
2.	−0·8; −0·4	high supply in assets and income
3.	−0·4; 0	fair supply in assets and income
4.	0; + 0·4	medium supply in assets and income
5.	+ 0·4; + 0·8	weak supply in assets and income
6.	+ 0·8	very low supply in assets and income

The terms "favourable" and "unfavourable" are used here flexibly. For example, a weak supply of assets is not unfavourable for an extensive cereal-producing farm of high profitability. Similarly, a vineyard of relatively low

profitability may have a high supply in assets. Generally, the collective farms in each group are characterized by homogenous economic conditions and can be treated as uniform in the context of national planning.

The individual types making up the regional distribution are not contiguous. This is due to the fact that in a small country like Hungary natural regions do not stand out in sharp contrast to each other and their economic levels are influenced by a large number of external circumstances. As far as 1969 is concerned, the organization of collective farms had not yet been established in definitive form and the differences of level between neighbouring collectives are often due to the different credit and investment policies of the farm managements. The small regional units are also responsible for the more heterogeneous pattern of the distribution. Nevertheless, the types show a visible *pattern* furnishing a sufficient basis for regional analysis.

The main areas of farms with high incomes, high accumulation and good supply of assets (categories 1 and 2) are the following:

— the northern and eastern parts of the Little Plain,
— the Mezőföld and the Danube Valley,
— the loess-region of the Great Hungarian Plain, with special regard to the loess-region of Szolnok,
— the surroundings of Budapest,
— the southern foothills of the Northern Upland.

The *Little Plain* has traditionally been characterized by a high level of farming as a consequence of its old market orientation. Formerly, the western part of the region was the centre of advanced dairy farming; recently, however, areas of intensive crop production have come to the fore on its borders.

The *Mezőföld* and the right bank of the Danube Valley between Dömsöd and Kalocsa form a contiguous belt of advanced agriculture. It is worth mentioning that since collectivization the Danube Valley has shown a rapid advance in farming standards.

On the loess-region of the *Great Hungarian Plain* farming has always been of a high standard and has advanced considerably during the past twenty years. Despite the fact that it is the driest part of the country, the loess-region of Szolnok exhibits a very high level of farming. Large-scale farming was introduced to this area as early as the early 1950's followed by the establishment of irrigation and the building of modern farms. Consequently, the supply of assets in this area is high, and the income figures from cereal production, the leading branch, are very favourable. In the south-eastern part of the Great Hungarian Plain, considered to be Hungary's richest agricultural region, collective farms of the highest category are exceeded in number by those of moderate standard (category 3). To achieve high yields in the most fertile soils of the country, a relatively low asset input is required which artifically depresses their economic level.

The *area north of the Tisza*, along the southern foothills of the Hungarian Upland displays an advanced level of farming mainly due to the historical wine-districts.

The collective farms located in the vicinity of Budapest owe their high standards to the proximity of the market although this is now changing.

These farms enjoy a high supply of assets linked with orchard and glasshouse cultures and food processing. The physical conditions of agriculture are rather poor and as transport and storage techniques have improved, the region has lost its significance as a supplier to the Budapest market.

First impressions are that the distribution of collective farms with unfavourable farming levels (categories 5 and 6) is associated with adverse natural conditions; in fact, backwardness is related to several factors. The regions where the level of farming is unfavourable are:

— the western areas of Transdanubia,
— the hilly districts of Zala and Somogy,
— the Dráva Region,
— the Danube-Tisza Interfluve,
— the Northern Uplands,
— the Nyírség and the lowlands of Szatmár-Bereg,
— the Körös-Berettyó Region, and
— the northern section of the Tisza Valley.

Before World War II, Transdanubia was traditionally an area of advanced dairying and sugar beet production. The present-day economic difficulties of the region are to be attributed to the low rentability of these branches. In order to attain rapid improvements and immediate capital returns, the agricultural modernization policy concentrates on alternate branches of production. The original sequence of enterprises was wheat, maize, poultry and hogs, while the modernization of cattle breeding and industrial crop production has recently commenced.

The hilly districts of Somogy and Zala and the Northern Uplands, which are characterized by cattle breeding, face chronic stagnation and unfavourable natural endowments are only making things worse. Some of the smaller areas are unsuitable for the development of modern farming, and in the long term, the abandonment of agriculture is to be expected here.

The sandy areas of the Great Hungarian Plain favour the labour-intensive cultures of vineyards, fruit and vegetables. The newly planted vines and orchards point to an advancement in the level of some collective farms. Nevertheless, the bulk of the vineyards and orchards have remained in private hands, and in most co-operatives only mediocre output is obtained from arable farming. The relative agricultural overpopulation of the Nyírség Region is a hindrance to the improvement of farming level.

The backwardness of the three river valleys mentioned in this section can be ascribed to the poor state of communications leading to insufficient specialization and poor market outlets. To be sure, bad soil conditions — sodic and alluvial acidic soils — are found in areas of advanced farming as well.

REFERENCES

Bernát, T.—Enyedi, Gy. (1961): *A magyar mezőgazdaság termelési körzetei* (Production regions of Hungarian agriculture). Budapest, Mezőgazdasági Kiadó, 168 p.

Bernát, T. and Enyedi, Gy. (1968): A magyar mezőgazdaság területi fejlődése (The regional development of Hungarian agriculture). *Földrajzi Értesítő*, No. 4, pp. 407—429.

Berry, B. L. J. (1961): A method for deriving multi-factor uniform regions. *Przegląd Geograficzny*, 33, No. 2, pp. 263—279.

Enyedi, Gy. (1964): Geographical types of agriculture in Hungary. Dept. of Geography, University of Liverpool, *Research Papers*, No. 3, pp. 1—16.

Enyedi, Gy. and G. Szabó, M. (1955): A Délkelet-Alföld mezőgazdaságának földrajzi alapvonásai (The geographical features of the agriculture of South-eastern Great Plain). *Földrajzi Értesítő*, No. 4, pp. 445—464.

Henshall, J. D. and King, L. J. (1966): Some structural characteristics of peasant agriculture in Barbados. *Inst. Brit. Geogr. Transactions*, 38, pp. 183—195.

PART THREE

INDUSTRY, TOURISM AND REGIONAL DEVELOPMENT

THE REGIONAL IMPACT OF TOURIST DEVELOPMENT — THE CASE OF SOUTHSEA (HANTS)

by

G. J. ASHWORTH

There is an, often unspoken, assumption that tourism is a particularly suitable engine of economic development for regions of relative economic backwardness (IUOTO, 1973). In the UK it is the rural problem regions, such as Central Wales and the Scottish Highlands that have looked most readily to tourism for their economic salvation. In Wales, income from tourism doubled between 1960 and 1970, and with around 10 m visitors Wales was the third most popular holiday destination for domestic tourists (Wales Tourist Board, 1969). In Scotland, the Highlands and Islands Development Boards have between 1965 and 1970 made grants totalling £2·9 m and further loans of £1·3 m to tourist enterprises and created an additional 2,000 jobs in the tourist industry. Similarly most of the reports of the English Regional Economic Planning Councils have made reference to tourism and its 'proper' contribution to regional development (Nth. Ec. Plan. Region, 1966).

The justification for this reliance on tourism is found in three principal arguments. Tourism can use regional resources which would otherwise remain unused. In particular regional attributes which are disincentives to other activities, such as rugged terrain, relative isolation, and cultural conservatism, can be turned into assets by the tourist industry. The local economy is expected to gain from tourist developments both directly through visitor spending and by the patronage of visitors maintaining otherwise non-viable local services, and indirectly from the added rate revenue obtainable from accommodation and catering facilities. The London public transport undertaking for example, has estimated that visitors to the city contribute around 20% of total bus revenues. Finally, it can be argued that tourism is a more acceptable means of economic development than most alternatives with fewer disadvantages of industrial pollution or the introduction of intrusive elements into the landscape. It also contains a pleasing element of regional self-advertisement and encourages contacts outside the region which benefit development generally. In the South-West region, for example, the recreational facilities and favourable image of a major holiday region has encouraged the movement of secondary industry into the area (Newby, 1971).

The objections to the assumed simple connection between tourism and economic development can be grouped under four headings.

THE NATURE OF THE TOURIST MULTIPLIER

Attempts at calculating the size of the total addition to regional incomes resulting from tourist spending have had wildly different results with tourist multipliers between 2·7 and 4·3 being calculated for a variety of national units and from 1·25 to 1·8 for sub-national regions depending on the size and nature of the regions' economic base (Archer and Owen, 1971). Levitt and Gulati (1970) have cast grave doubt on the methods of calculating the more optimistic figures. It is now clear that the range of tourist spending makes calculation very difficult in practice, that the leakage of spending out of the region is larger than expected, not least because the tourist's patterns of consumption are determined extraregionally, and that the increasing tendency for the ownership of tourist resources, especially accommodation, to be vested outside the region, lowers profitability to the region. Recent research (Archer 1973) has also revealed the large variations in the multiplier that occur between visitors staying in different accommodation forms. Guest houses, camp and caravan sites receive large payments for personal service and are normally locally owned, while the multiplier for licensed hotels is significantly smaller. Thus the multiplier appears to be largest among those visitors whose total average daily spending is lowest.

The employment resulting from tourist spending has also been investigated and the initial optimism is not supported. Much employment in tourism is necessarily seasonal and supplied by imported labour or family labour which would not otherwise be in the labour market (Lewis, Culyer and Brady, 1970). In the Cairngorms, for example, only 27% of the 1100 workers in the accommodation sector were employed throughout the year and 76% of the total were women (Scottish Development Department, 1963). In addition tourist spending tends to be on the products of labour intensive service industries rather than capital intensive manufacturing industries. In Britain around 50% of visitor expenditure is on accommodation and catering, 28% on shopping, 12·5% on transport and 9·5% on entertainment and other services (BTA, 1971). These industries have a record of lower than average productivity and lower than average wages. Employment resulting from tourist spending is thus likely to be in a low-value added sector of the economy (Scottish Hotel School, 1972).

REGIONAL DIFFUSION

It has been argued that an advantage of tourism in promoting regional economic growth is that it will encourage a diffusion of economic benefits through a wide area, whereas manufacturing industry encourages concentration. Lundgren (1971), for example, has traced the development of food procurement zones around a resort hotel in the Caribbean. Despite the intrinsic mobility of tourists and the use as tourist attractions of areally extensive features, such as tracts of scenery or expanses of beach, this spread effect is rarely as significant as expected. Visitors depend on the location of accommodation, most of which is concentrated into a limited number of centres.

Traditional accommodation, such as hotels and guest houses, are clustered in the towns for reasons of both historical inertia, and in the case of the former, a continuing dependence on a non-tourist clientele. The sites of camping places, holiday chalets and farm-house accommodation need be less clustered, although planning controls particularly of caravan parks and camp sites have in practice encouraged concentration but "the main focus of attention for the overnight holidaymaker and the day tripper is the urban seaside resort" (Burton, 1967).

The change in the means of transport both to and within the holiday region from rail and coach to the private motor car freed the visitor from the railhead resort but still encourages a concentration of tourist traffic along the main touring routes. In the Scottish Highlands, for example, variations in accessibility have led to a coalescence of tourist amentites into the most favoured areas (Turnock, 1970).

Finally limitations in the information fields of visitors encourages concentration in the well-known 'honeypots', and it is likely that the more imperfect the information held by visitors the more concentrated will be the pressure on a few well-known areas. Tourist marketing agencies encourage this concentration by publicizing easily recognisable well-known features within a tourist region as a means of 'selling' holidays. It is again likely that the further visitors come the less complete their knowledge of the region and the greater their tendency to concentration. The extreme being reached with foreign visitors whose visits are concentrated into a few well-known centres in Britain, *(Table I)* with 75% of all foreign visitor nights being recorded in London.

TABLE I

Percentage of foreign non-business visitors to Britain staying one night or more in 1968 (Young, 1972)

	Stratford	Oxford	Cambridge	Edinburgh
All visitors	12	11	10	24
European visitors	7	10	8	16
American visitors	18	10	10	29
Commonwealth visitors	14	13	13	34

THE COSTS OF TOURIST DEVELOPMENT

The construction of a balance sheet for tourist development is complicated by the elusive nature of many of the costs which often do not accrue to the same individuals or institutions as do the benefits. Resources diverted to tourism are denied to other users with resulting problems such as that highlighted by the homes v. hotels controversy in London (City of Westminster, 1972). Tourists make demands on the general infrastructure of an area for which they make no direct payment and compete with residents for such

resources as road space (City of Westminster, 1973). Lundberg (1972) calculated that in 1968 each visitor to Hawaii imposed a daily cost of $ 0·69 on public services. Beyond a certain level of tourist use 'psychological saturation' (Young 1973) of a tourist region brings residents into confrontation with visitors and imposes a cost in terms of environmental quality on the locality. Conflict between the proposals of the tourist authorities for such developments as new accommodation facilities, extensive car parking provision or yacht marinas, and conservation and amenity groups of local residents has intensified and in English holiday resorts such as Brighton, Portsmouth and Lyme Regis, victory has gone to the residents and tourist development has been severely curtailed.

LOCATION

The final, and perhaps most conclusive, objection to the initial assumption is that there is in practice little coincidence between the regions in need of economic assistance and the regions in Britain tourists actually visit. As the director of the S. E. English Tourist Association succinctly put it; "the development areas of this country bear no relation to the tourist areas" (Burnett, 1970).

TABLE II

Regional distribution of hotel beds

Economic Planning regions	Total English hotels (%)	Number of bedrooms (average)
North	4·9	22
N-West	7·8	39
Yorkshire	6·4	35
Midlands	9·2	26
E-Anglia	3·8	26
S-West	21·2	26
S-East	22·0	27
London	24·9	90

Source: BTA 1968

Most British accommodation resources are located in Southern and Central England (BTA, 1971). This is particularly evident with larger hotels and those with a luxury rating, important for inclusive tours and foreign visitors respectively *(Table II)*. Central government grants for new hotel building, available between 1969 and 1973 under the Development of Tourism Act (1969) have, if anything, reinforced this pattern *(Table III)*. The financial support given by the English Tourist Board to projects in the development areas is, potentially, an important means of improving tourist infrastructure in these regions and £1·2 million was disbursed in this way in 1973.

TABLE III

Government loans and grants to hotels (as at 31 March, 1973)

E. T. B. Region (Fig. 1)	Loans			Grants		
	New hotel rooms	Extensions rooms	Total	New hotel rooms	Extensions rooms	Total
E. Anglia	10	10	20	1 785	1 029	2 814
E. Midlands	—	17	17	1 503	496	1 999
Eng Lakes	52	31	83	380	688	1 068
London	666	136	802	19 549	4 268	24 177
Northumbria	43	66	109	1 167	410	1 577
N-West	27	79	106	4 230	2 797	7 027
S-East	—	238	238	2 128	3 836	5 964
Thames and Chilterns	212	45	257	1 423	1 655	3 078
W. Country	100	322	422	2 458	3 312	5 770
W. Midlands	—	349	349	2 689	1 966	4 655
Yorkshire	—	46	46	1 902	891	2 793
	1 110	1 339	2 449	39 214	21 708	60 922

Source: BTA Annual Report 1973

Demand considerations also favour the parts of Britain outside the Development areas. The propensity to take a domestic holiday is closely related to income and car-ownership levels (Young, 1972) which are highest in Southern and Central England. Around a quarter of British holidaymakers remain in their home region and a further 40% travel only to the adjacent region (BTA, 1971). The choice of holiday location is strongly influenced by the images of parts of Britain held by potential visitors and the unfavourable images held of Northern England and Wales do not encourage visitors (Gould and White, 1968). Finally the most important sea and air entry points for foreign visitors to Britain are located in the South-East far from the regions most in need of economic stimulation.

SOUTHSEA

In a study of tourism it is necessary to revert rapidly to the scale of the individual resort. Data on visitor activities, origins and expenditure, are only available in any detail at the resort level and despite the recent establishment of regional and national tourist authorities in Britain, tourist planning and management is in practice normally undertaken at this scale. Southsea is one of the few resorts where tourist data have been systematically and recently collected and the example can be used to illustrate the weight given to the factors discussed in the first part in development decisions.

Southsea is one of the more important English seaside resorts, receiving around 130,000 staying visitors annually who spend around £3·7 m on holidays in the area (Ashworth and Bradbeer, 1973). It is located on the climatically

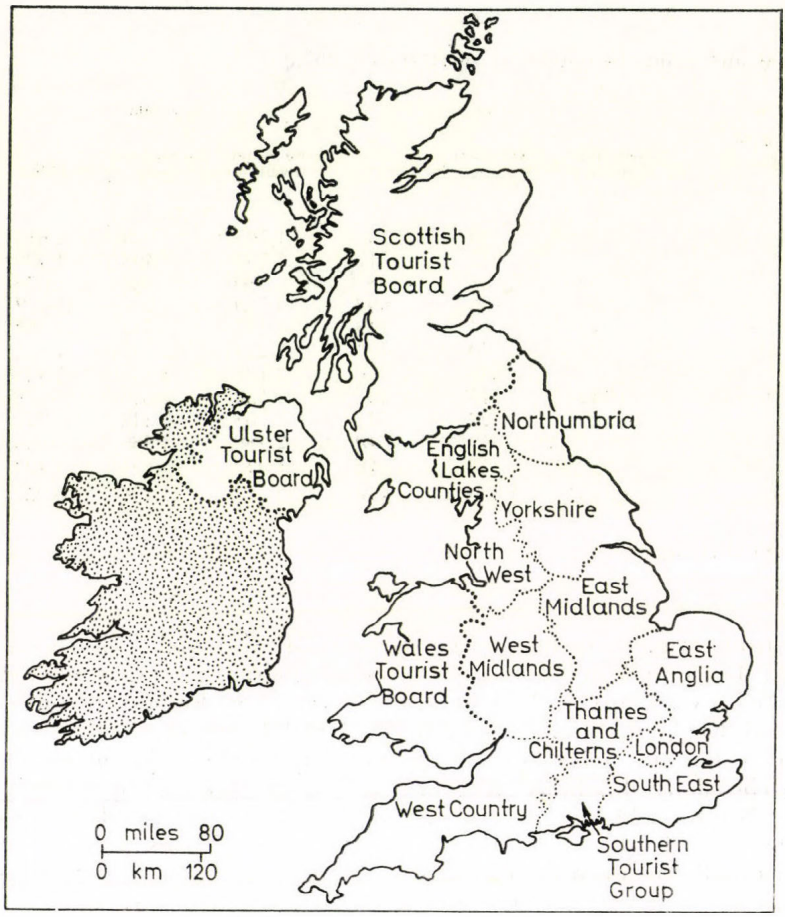


Fig. 1. Regional tourist boards

favoured south coast and is part of a tourist region which includes the coastal resorts between Worthing and Hayling in the east and those of the Isle of Wight to the south *(Table IV)*.

The tourist industry of Southsea, as in most British seaside resorts, is effectively controlled by the local authority, either directly through corporation ownership and management of tourist facilities, or indirectly through its allocation of leases and certificates of usage. When it is remembered that Southsea, as a part of the city of Portsmouth, exists as an island of relative poverty in the prosperous South-East region, the possibility of using tourism as a means of economic regeneration becomes particularly attractive. In this respect the Southsea example may be relevant to other problem areas of this type where the application of tourism is less obvious than in peripheral rural areas but may be equally efficacious.

Table IV

Choice of holiday region of British domestic holidaymakers

BTA Regions	Region of residence of British domestic holidaymakers	Region of holiday destination of main holiday of British domestic holiday-makers	Region of holiday destination of over-seas holidaymakers
S-West	7	22	20
South	7	16	20
West	5	13	13
Scotland	10	11	19
Wales	5	13	13
N-West	13	11	16
S-East	11	10	23
East	3	8	11
N/N-East	15	8	15
Midlands	15	7	23
London	15	3	56

Source: BTA 1968

A mixture of public and private enterprise owns and manages the tourist industry in the town and the 'tourist lobby' is composed therefore of both commercial pressure groups such as the Chamber of Commerce and Hoteliers Association and also certain departments of the municipal administration.

The justification for a vigorous development of the tourist sector of the city's economy rests upon three main arguments. Tourism directly employs around 1500 permanent workers, mostly in the hotel and catering sector and indirectly creates income in a wide range of ancillary services. It has been estimated that 10% of the total annual passenger-trips made on municipal buses, and 3·5% of total retail expenditure in the city, can be attributed directly to tourists (Dyer, 1971). Workers in tourism, however, are only a small part of the city's labour force, earn a wage lower than the city average and exist in a region with a pronounced labour shortage.

Secondly, it is argued that the municipality gains considerable finance from rates levied on the hotels and guest houses and other catering and entertainment establishments. In its own right the local authority, through its beach-trading department, engages in tourist enterprises such as the hiring of beach equipment and the management of beach cafes, and also sells short term leases to traders along the seafront. These activities grossed £178,000 in 1972, and the profit was devoted to the finance of other corporatio n enterprises (City of Portsmouth, 1973). On the other hand, the costs to the local authority include the provision of car park spaces for which either no charge or a below cost charge is made, the maintenance of the promenade and resort gardens, and the provision of a level of public services, including sewage and refuse disposal, higher than would otherwise be necessary. In addition, the costs of advertising the resort (£10,000 in 1973) and providing an information service are borne by the authority.

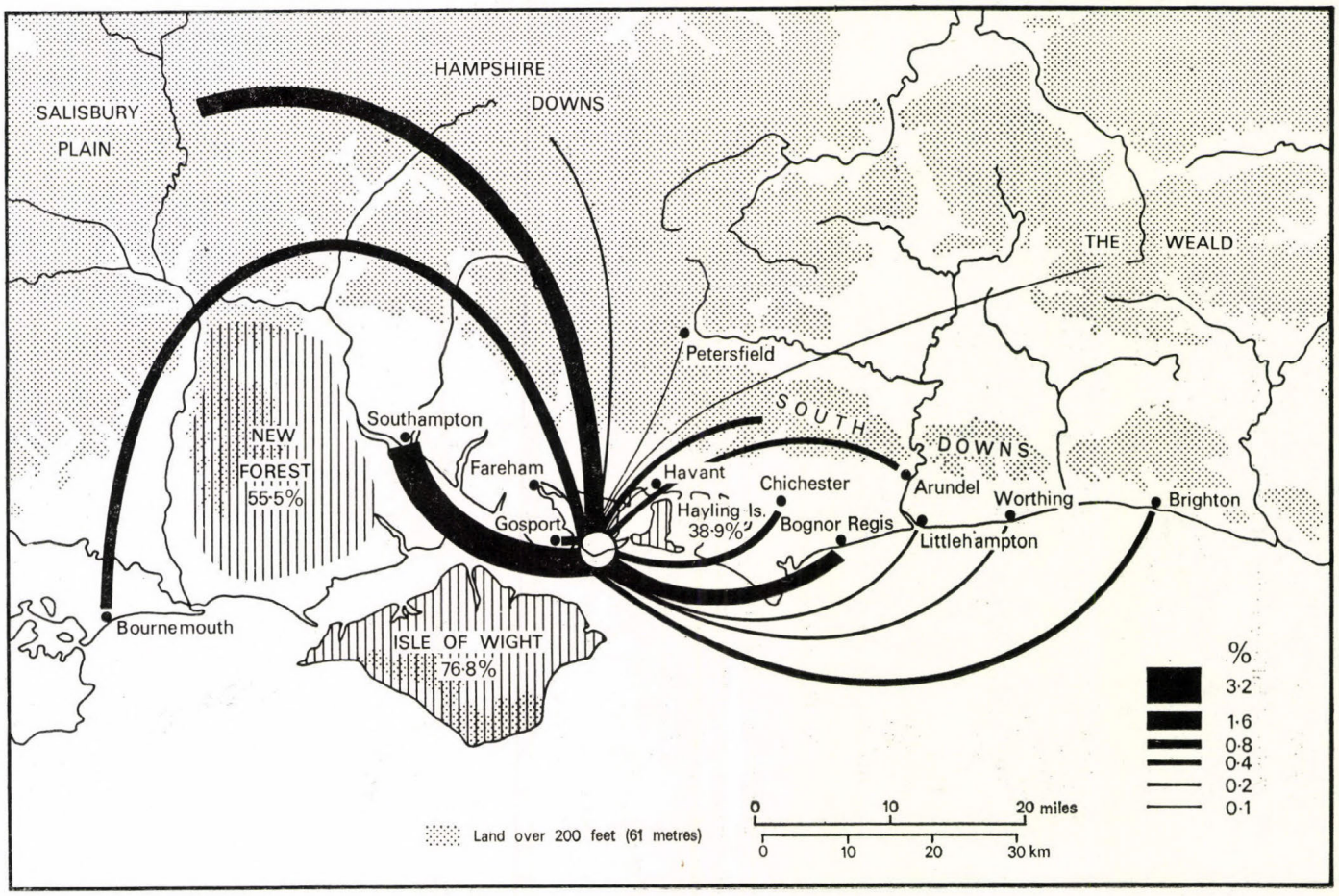


Fig. 2. Visitor excursions from Southsea

Thirdly, the resources used by tourism in Southsea have an opportunity cost. With regard to labour, it is probable that little competition with other industries occurs in practice. Much of the seasonal employment, especially in the catering and beach trading sectors, is provided by students, while much of the labour in the accommodation sector is obtained from the families of the establishments' owners, and would not be available for employment elsewhere. The position is not so clear, however, in the allocation of capital resources and it is difficult to justify hotel construction, or the conversion of existing private houses into guest houses and holiday flats in a city with a chronic housing shortage. In this respect it is unfortunate that the resort is located in a district of the city which is also a major residential area short of suitable building land and under considerable pressure for both public and private housing. Tourist development thus rapidly becomes a major political issue with the majority Conservative party which holds all 9 of the resort's council seats favouring continued investment in tourist facilities while the minority Labour party, whose representation is strongest in the centre and north of the city gives a higher priority to housing development.

The spread of the impact of tourism from the resort through the wider region of the city and beyond is of major importance and the increasing mobility of visitors has initiated a shift in emphasis from "resort tourism to

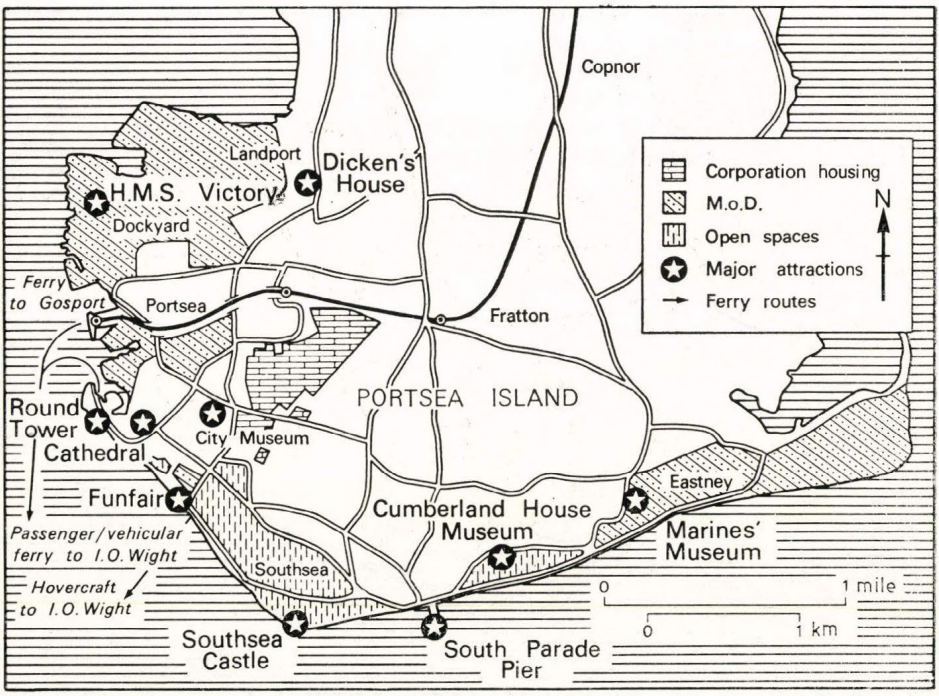


Fig. 3. Southsea. Attractions

regional tourism" (Young, 1972). One response has been the organization of regional marketing boards for the joint publicity of groups of resorts. Southsea was instrumental in establishing the 'Southern Tourist Group', in association with Bournemouth and Southampton, to sell the attractions of the region as a whole. Visitors are no longer satisfied with a static holiday at a single resort but make trips by car and coach into the surrounding countryside and neighbouring towns and resorts *(Fig. 2)*. Tourist expenditure, however, is still heavily concentrated in the resort where accommodation is provided and the economic impact of 'holiday excursionism' is small. Even within the city tourist activities are largely confined to the districts of Southsea and Eastney which contain over 90% of all accommodation establishments *(Figs 3* and *4)* (Ashworth and Bradbeer, 1974).

The local authority is faced with a number of alternative policies for the resort, which can be summarized under three points.

(1) Minimal public investment and severe planning controls on the expansion of the private sector. This will result in a rapidly ageing clientele making use of existing resources, and a decline in the importance of the resort function to the city (Ashworth and Bradbeer, 1972).

(2) The acceptance of the role of the resort as a day tripping centre for the region, as ascribed to Southsea by the South Hants Plan (South Hampshire

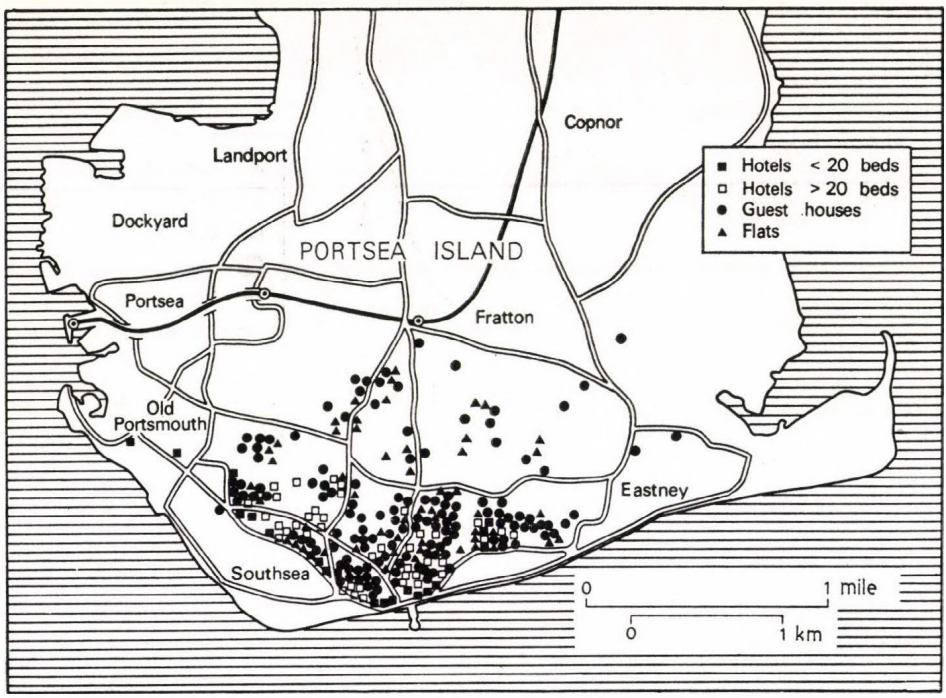


Fig. 4. Southsea. Hotels and pensions

Plan, 1969). Economic benefits from the day visitor are small, around 80p. per visitor day. Most of the costs to the authority, mentioned earlier, will still have to be borne and would amount to around three times the £ 960,000 spent in the resort. In addition most of the services demanded by day visitors will be financed by the city council, while the region of origin of most of the visitors, the county of Hampshire, will not, at present, subsidize these services. (3) The extension of the resort function with, in particular, increased investment in accommodation facilities. Within this policy a number of options are possible. The present hotel/guest house based domestic tourist industry can be supplemented or replaced by self-catering, conference or foreign visitors, all of which make different demands on resources, and in the case of the last two make significantly greater per capita contributions to the local economy.

Choice between alternative development strategies is strongly influenced by the nature of the decision-making bodies. Tourist planning in the city and the region are conducted by separate authorities, Portsmouth County Borough and Hampshire County Council respectively, and even after local government reorganization when the new Hampshire County Council assumes an overall responsibility for planning, the city of Portsmouth will still

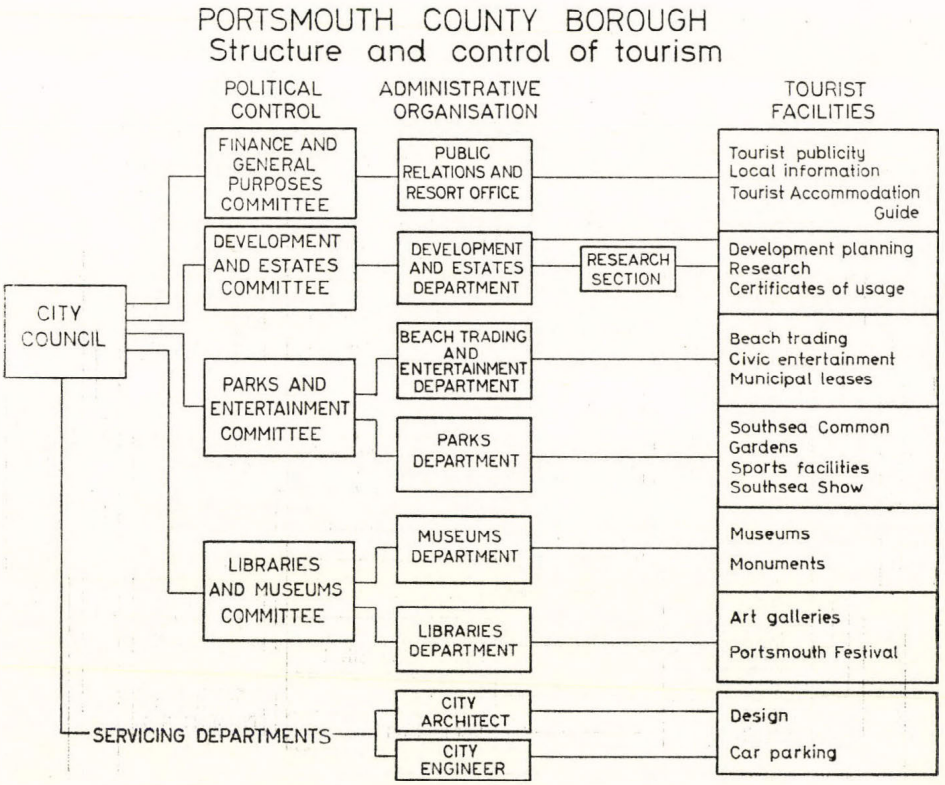


Fig. 5. Tourist organization. Portsmouth City Council

be in effective control of its own tourist development, with no responsibility to consider the regional implications of its decisions. Regional Tourist Boards were established after the 1969 Act (see Fig. 1). They are effectively only marketing agencies charged with 'creating a common attitude on likely trends' and 'conducting market research' (Henig, 1973). They do not, however, have a responsibility for formulating regional tourist plans, nor could they implement such plans without the consent of their constituent local authorities.

Even within the new district authority of Portsmouth, which came into existence on April lst, 1974, responsibility for tourist development is fragmented between departments that are answerable to different council committees *(Figs 5* and *6)*. The attraction of visitors to the resort, the exercise of planning control over resort facilities, the provision of museums and galleries, and the management of beach trading enterprises, are each the responsibility of a separate corporation department. No department is therefore in a position to evaluate the costs and benefits accruing to the town, and no department is charged with the responsibility of choosing between the alternative development strategies outlined. The establishment of a 'Policy Committee' and an interdepartmental officers management team, in accordance with the recommendations of the Baines Committee on Corporate Manage-

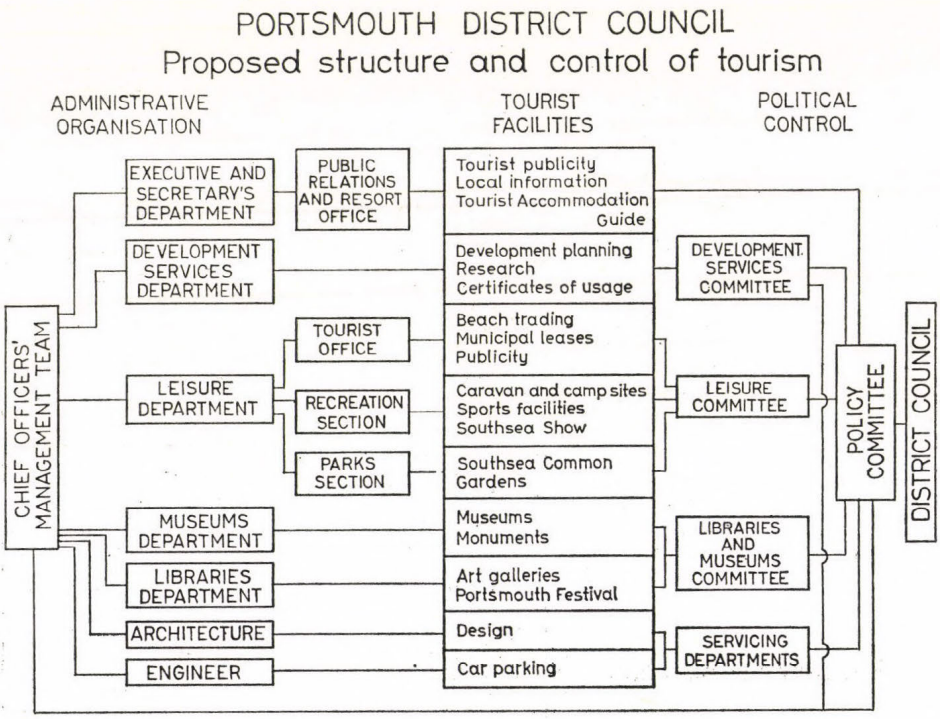


Fig. 6. Tourist organization. Portsmouth District Council

ment, may overcome these difficulties but there is little evidence of this occurring at present.

Finally, the existence of both private and public interests in tourist development is a further source of fragmentation, and often friction, between the authority and the commercial lobby, particularly as the benefits of tourism accrue directly to the private sector and usually only indirectly, through rates, to the corporation, while much of the costs are paid directly by the authority in the form of beach and promenade maintenance, park provision, car parking spaces and even municipal entertainment which is normally operated at a loss.

CONCLUSIONS

Two main conclusions can be drawn from the contribution of the work on Southsea to the debate on the development role of tourism. The first sounds a note of caution. The benefits of tourism may be considerably less than anticipated while the costs are often less obvious but higher than expected. Although tourists may increasingly view the resources of a region as a whole and are increasingly mobile within it, spending is still likely to be highest in the accommodation centres which will tend to be concentrated rather than dispersed.

Secondly, attempts at using tourism as a generator of regional economic development presupposes the existence of organizations capable of creating and implementing regional tourist policies, and evaluating costs and benefits of alternative strategies. There are some indications that the English Tourist Board is developing into such an organization. It administers government financial assistance to the tourist industry, including that specifically earmarked for the development areas, it publicizes opportunities for tourist development and conducts some research into the economic and social impact of tourist activities upon regions. Nevertheless, institutions capable of allocating tourist resources, or manipulating the distribution of visitors between, or within regions, do not at present exist in Britain.

ACKNOWLEDGMENTS

Special acknowledgment is due to John Bradbeer, my co-worker on much of the research on which this paper is based, and to Gillian Brady who drew the maps.

REFERENCES

Archer, B. H. and Owen, C. B. (1971): Towards a Tourist Regional Multiplier. *Regional Studies*, No. 5, pp. 289—294.

Archer, B. H. (1973): The Impact of Domestic Tourism. *Bangor Occ. Papers in Economics*, No. 2.

Ashworth, G. J. and Bradbeer, J. B. (1972): The Future of Southsea as a resort. *S. Hants Geographer*, pp. 29—33.

Ashworth, G. J. and Bradbeer, J. B. (1973): *Southsea Study — Preliminary Report.* City of Portsmouth, Development Dept.
Ashworth, G. J. and Bradbeer, J. B. (1974): Portsmouth's Recreational Resources, chapter in *Portsmouth Essays.* Department of Geography, Portsmouth Polytechnic.
BTA—*British Tourist Authority* (1971): Digest of Tourist Statistics.
Burnett, W. (1970): *Letter to Guardian,* 30. 12. 70.
Burton, T. L. (1967): *Outdoor Recreation in Enterprises in problem rural areas.* Wye College, London.
City of Portsmouth (1973): Report of Entertainment and Catering Department.
City of Westminster (1972): Hotels and Tourism. *Topic Paper,* T. 1.
Dyer, J. (1971): The development of Portsmouth and Southsea as a holiday resort. *Development,* Portsmouth.
Gould, P. R. and White, R. R. (1968): The mental maps of British School Leavers. *Regional Studies,* 2 (2), pp. 161—182.
Henig, M. (1973): Local Government and Tourism. *Tourism in England.* English Tourist Board, September.
IUOTO — International Union of Official Travel Organisations (1973): How to revive stagnating areas through tourism. *World Travel,* No. 115, October, pp. 35—37.
Lewis, F. M. M., Culyer, A. J. and Brady, G. A. (1970): The Holiday Industry of Devon and Cornwall. *Report* prepared for Ministry of Housing and Local Government.
Levitt, K. and Gulati, I. (1970): Income effect of Tourist Spending. *Social and Economic Studies,* September.
Lundberg, D. (1972): *The Tourist Business.* Chicago.
Lundgren, J. (1971): Agricultural Marketing and Distribution Arrangements with respect to the resort hotel in the Caribbean. *Tourist Review,* July, pp. 86—93.
Newby, P. T. (1971): Attitudes to a Business Environment: the case of the assisted areas of the South West. Chapter in Gregory, K. J. and Ravenhill, W. L. D. Ed. *Exeter Essays in Geography,* pp. 185—199.
Northern Economic Planning Region (1966): Challenge of the changing North, p. 47.
Scottish Development Department (1967): Cairngorm Area.
Scottish Hotel School (1972): University of Strathclyde, May.
South Hampshire Plan (1969): Recreation. Study Report, Group D, No. 5.
Turnock D. (1970): *Patterns of Highland Development.*
Wales Tourist Board (1969): Tourism in Wales.
Young, G. (1972): *Accommodation Services in Britain 1970—1980.*
Young, G. (1973): *Tourism, blessing or blight.*

CHANGES IN THE SPATIAL STRUCTURE OF HUNGARIAN INDUSTRY AND THE DETERMINANTS OF INDUSTRIAL LOCATION

by

GY. BORA

Formerly Hungarian industry was characterized by a monocentric locational structure. Locational factors such as the social division of labour, the market and the labour force led to the development of Budapest as the only important manufacturing centre in the country which in 1938 employed 55 per cent of all industrial workers. Owing to local sources of raw materials and energy, the industry of the so-called energy axis ranked second after that of Budapest. In addition to these two areas, there was some industry mainly in the larger towns, but apart from handicrafts and small plants, the major part of the country was virtually unindustrialized.

After the introduction of a planned economy in 1947, regional policy made every effort to change this disproportionate spatial structure of industry, and policies were elaborated for the rational location of industry. Already by the end of the first ten years of this policy (up to 1960) positive results had been achieved. During this period the principal task was the rapid development of the basic materials industry, but this policy unfortunately was not free from economic errors. At the time the most important new industrial investment was located at the limited sources of raw materials in the country. As a consequence, the outstanding role of Budapest in national industrial production decreased, and that of provincial areas, where industry already existed, increased. However, the major part of the country was still underindustrialized, and that is why it was possible to achieve only minor results there *(Fig. 1)*.

The next stage of industrial location policy occupied the years from 1960 to 1970. During this period, the main goal was to bring industry to purely agricultural and economically backward areas. In 1960 there were strong disparities in industrialization level between the individual regions of the country as shown by the indicator: industrial employees per 10,000 inhabitants.

In 1960 there were on average 1334 industrial employees per 10,000 inhabitants in the well-industrialized regions, the highest value of 2234 per 10,000 inhabitants being found in Komárom county. By contrast, the indicator averaged 572 per 10,000 inhabitants in the underindustrialized areas, the lowest value of 247 per 10,000 inhabitants being in Szabolcs-Szatmár county. As a matter of fact, the regionally divergent levels of industrialization also involved disparities in incomes and living standards.

In 1959 and 1960 the Government introduced a number of organizational, financial and investment preferences in order to promote the industrialization of the backward regions. These were followed in 1968 by the initiation of

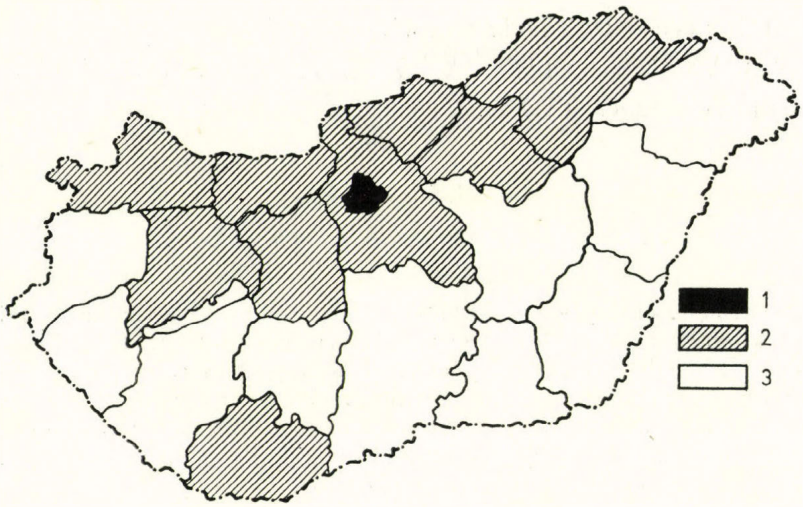


Fig. 1. Level of industrialization
1 = Budapest;
2 = industrial developed counties;
3 = industrial underdeveloped counties

new regional economic regulators in accordance with the system of economic management. Between 1960 and 1970 industrial production nearly doubled and the number of industrial employees increased by 446,000, that is, by 34 per cent *(Table I)*.

TABLE I

Changes in the spatial structure of Hungarian industry between 1960 and 1970

	Spatial distribution of investment in industry 1956—70 (per cent)	Growth in industrial manpower 1960—1970 (1960 = 100)	Spatial distribution of increase in industrial manpower (per cent)	Spatial distribution of industrial manpower (per cent)	
				1960	1970
Budapest	22·5	105·2	6·7	44	34
Well-industrialized areas	52·0	137·0	39·3	36	38
Under-industrialized areas	25·5	199·0	54·0	20	28
Total	100·0	134·0	100·0	100·0	100·0

In Budapest, industrial development has implied first of all reconstruction, modernization, higher productivity and investment, promoting the intensification of production. As against national investment in industry, essentially lower sums were directed towards Budapest than warranted by her share in nationwide industrial output. In Budapest, industry has been developed selectively and priority is given to branches that have proved efficient from

the viewpoint of advanced technology, exports and city-supply. The proportion of the country's industrial employees working in Budapest has consequently been reduced *(Fig. 2)*.

In 1965 a ten-year decentralization policy was started the aim of which was to relocate a number of plants from Budapest to provincial areas, and this concerned 70,000 jobs. Out-of-date plants of small capacity, and those causing pollution were the first to be so affected. Between 1960 and 1970, however, the number of industrial employees in Budapest increased and

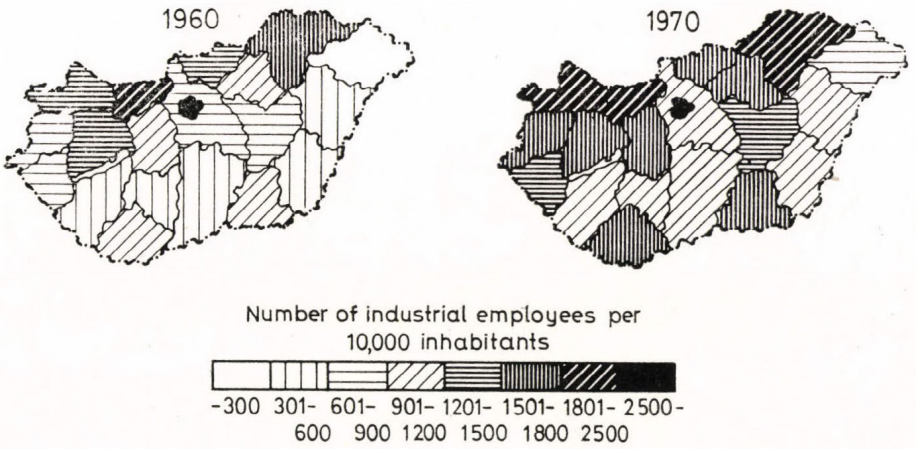


Fig. 2. Growth of industrialization, 1960—1970

despite a decrease towards the end of the period, the capital still employed 30,000 more industrial workers in 1970 than in 1960. Since 1970 the decrease in industrial labour has continued. Between 1967 and 1973 Budapest lost some 80,000 industrial workers which only partly reflects the relocation of plants and the removal of capacity since most of the workers so affected remained in Budapest by changing employment. The considerable decrease in industrial labour may also be ascribed to the chronic labour shortage in the country which emerged first in Budapest. Consequently some 200 plants were transferred to provincial areas where labour was available.

Between 1960 and 1970 more than half of industrial investment was directed towards the *well-industrialized regions*. The high ratio was motivated by the fact that the strongly industrialized regions favoured first of all capital-intensive industries due to locational conditions such as raw materials and water supply. Accordingly, coal- and bauxite-mining, the building materials industry, aluminium production, aluminium rolling, electricity generation and the chemical industry have shown dynamic growth. At the same time, some 20,000 jobs were lost in these regions as a consequence of the partial reduction of uneconomical brown-coal mining; the loss of employment was counterbalanced by the development of the manufacturing industry. It was also necessary to establish new employment for females in the light- and food

industries. In the well-industrialized regions the number of industrial workers has increased at a somewhat faster rate than the national average, and between 1960 and 1970 their proportion in the total number of industrial employees increased marginally *(Fig. 3)*.

In the under-industrialized regions industrial employment has increased rapidly, the number of workers rising by 240,000. Though a smaller part of industrial investment was directed at these regions, the development of the less capital-intensive manufactures such as the machine industry, and

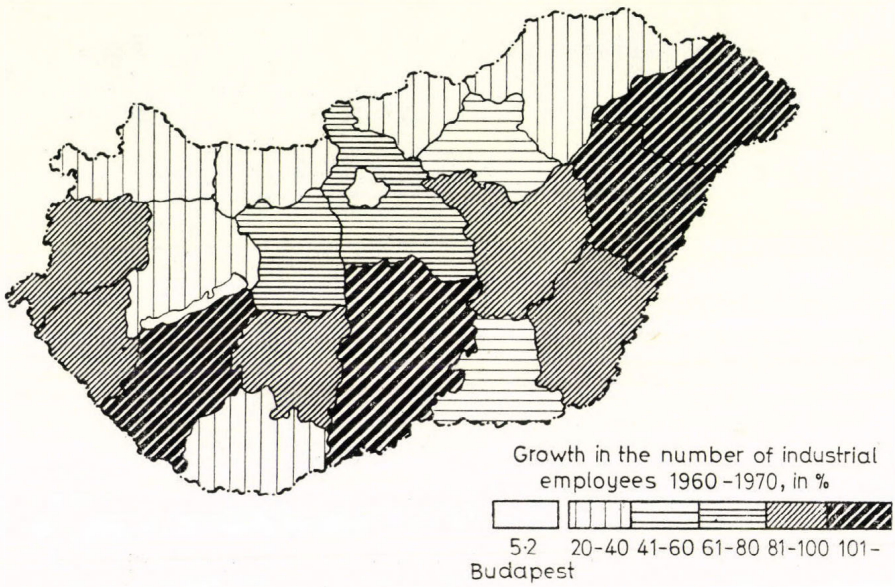


Fig. 3. Growth of industrial employees by counties, 1960—1970

the light- and food industries have provided facilities for rapid industrialization. Industrialization has brought to an end the former employment problems of these regions and at the same time has increased the income of the population and changed the structure of employment. During the early 1960's, the completion of the collectivization of agriculture resulted in the release of considerable surplus agricultural labour which found employment in industry. The rapid industrialization of the industrially backward regions has contributed to the formation of a more balanced spatial structure of industry.

However, the industrialization policy of the afore-mentioned period also had negative effects. In the first place the industrial development of Budapest lagged, chiefly from the technological point of view, because the regional distribution of investment discriminated against the capital. On the other hand, the social necessity of creating employment and industry in the provincial regions meant that this unfavourable aspect had to be faced at least temporarily. As far as investment potentialities are concerned the industrialization of the provincial regions was at the expense of development in Buda-

pest but this has been compensated for by the emergence of a balanced spatial structure of industry.

Another negative effect was the rapid growth of the industrial agglomeration of Budapest. While in 1950 the number of industrial employees of this area comprised 1·5 per cent of the total, this figure had grown to 5·6 per cent by 1970. This fact can be explained by the availability of manpower, although the proximity of the capital's industry as well as the favourable transportation and co-operational facilities were much more important reasons.

The third negative effect derives from the nature of the under-industrialized regions in that a number of new plants were located in small settlements instead of in towns, which increased the costs of investment due to lack of infrastructure. However, if the new plants had been located in the larger industrial centres and towns under the existing potentialities of the settlement network, that is, infrastructure, housing, and services, the influence of new manpower and their families would have put great strain on such places because of the imbalance between supply and demand. Therefore it seemed more feasible to locate industry where there was manpower. There are also some smaller plants in non-urban settlements, which are branches of, or work in co-operation with larger factories.

The changes that have taken place in the regional location of industry have also affected the conditions for industrial location. New locational factors and criteria have come to the fore which must be carefully examined. Of the changes in Hungary's national economy that have led to a revaluation of locational factors, the following may be regarded as the most significant:

(a) The extensive development of the economy, i. e. the achievement of economic growth by the employment of increasing amounts of labour, has given way to intensive methods. This means that more importance must be attached to capital investment, technical progress and productivity in the growth of the economy. Intensive development needs an economic management that aims at a more intensive decentralization of economic decisions and an increase in enterprise self-determination. The direct methods of management formerly used have been replaced by indirect methods such as incentives, regulators and preferences.

Economic efficiency has to embrace location as well and more attention must be paid to micro-economic (enterprise) interests in the choice of location whereas formerly macro-economic (national economic) interests were emphasized. There are a number of economic regulators capable of reconciling the two interests. In the choice of locations for dynamic industries such as chemicals utmost care must be given to the requirements of technology, scale economies and capacity.

Within industry more emphasis is given to the manufacturing branches (principally machine production and electronics) which co-operate with plants producing finished products, parts and fittings. While an assembly-shop requires more space and must therefore be located in a larger settlement, a town of large or medium size, the production of parts can be carried out in smaller plants, and what is more, in smaller settlements also.

(b) Hungary's national economy has undergone a multi-structural transformation. The changing structure of energy consumption has had a percep-

tible influence on the location of industry. Against the dynamic expansion in the use of hydrocarbons the importance of the traditional primary fuels, such as coal, has declined.

(c) Industrial location is greatly affected by the participation of the country in the socialist international division of labour. The pipe and transmission lines built within the framework of international co-operation attract the location of new plants.

(d) 20 years of progress in the field of transport and the modification of the transport structure have altered the significance of transport factors in economic location.

(e) Finally, one must refer to the effect on the spatial structure of the economy of the tendencies towards decentralization and concentration which are not mutually exclusive.

Above all one must point out that in the present situation no single criterion can be taken as a *ceteris paribus* factor, such as transport costs were by Weber. In other words no single factor is sufficient to determine location. A consequence of the progress in specialization is that the criteria have become differentiated by branches and therefore the search for and employment of factors specifically influencing given branches is one of the chief tasks of location decision-making.

First, one must emphasize the changed importance of natural factors. During certain stages of the development of Hungarian industry the sources of mineral raw materials had great impact on the distribution of primary industries. Owing to this influence coal based industrial complexes comprising energy production, iron and steel works, aluminium factories, chemicals and several branches of the building materials industry — cement, glass, porcelain and brick making — grew up. Due to the attraction of raw material sources and socio-historical factors, the primary industries have developed separately from the processing industries. In contrast to the coal based primary-industrial districts, Budapest became the centre of the processing industry.

The limited natural resources of the country are today of lesser importance than location factors for new enterprises. One may suppose that with the shift in energy structure, the formerly important role of coal will partly be superceded by oil and gas. Thus in the majority of industrial districts, costly low calorie coals are being replaced by natural gas which, consequently, must be piped away from the gas fields. Only large fresh discoveries of hydrocarbon reserves will make the establishment of new energy-intensive industry near oil and gas finds possible. The recent changes that have taken place in the world's energy consumption and especially increasing prices of the oil suggest that the large lignite reserves which can be worked by open-cast methods, will remain a locational factor for the generation of electricity.

On the other hand, raw material locations will retain their importance in the case of several branches of the building materials industry, that is, cement and lime production, the manufacturing of prefabricated concrete panels and brick-making.

However, water supply is becoming increasingly the most significant

of the natural locational factors. Most modern plants which demand enormous quantities of water, such as chemical complexes and conventional and, in the near future, atomic power stations, can be located only in certain well-defined parts of the country. The geographical distribution of large natural water-bodies is uneven. The two rivers suitable for the location of enterprises with large water demand, the Danube and Tisza, flow parallel and quite close to each other through the central part of the country. Extensive areas, by contrast, lack large streams. In the long run, locational policy must take into account the fact that linear zones of water-intensive industry may grow up along these rivers. The protection of the natural environment, the prevention of dangerous river and air pollution appear increasingly important tasks which also require careful site selection.

Locational criteria have changed with respect to manpower as well. As mentioned, in certain industrial districts of the country, but especially in the capital, labour reserves are now exhausted. If further industrial expansion, on account of other factors, is still justified, only highly productive branches representative of the most advanced technology should continue to be developed. In those regions where manpower is still available, a shortage of skilled labour presents increasing difficulties; therefore, only those branches should be located in such areas which are less demanding technologically and in which the work force can be readily trained. In putting into effect the aims of territorial policy, this problem must be anticipated increasingly. Manpower will in the future appear mainly as a qualitative rather than a quantitative locational factor.

One of the characteristics of modern industry is that in many branches highly effective and economical production can be realized only in plants of large size or by way of close linkages and production cycles. The questions of scale economies, manpower-demand and the related scientific-technical basis, call attention to the less studied criterion of city and settlement size. The fact that the expansion of the service sector in Hungary will be accelerated, makes the problem of the city size more complex. It means that in conjunction with the work force of a factory, a so-called "tertiary, service population" must also be planned for. It follows from this that if the character of the Hungarian settlement network is taken into account only a limited number of settlements can be designated as suitable locations for industry. In 1973, in addition to Budapest with two million inhabitants, Hungary had five cities of 100—200,000 population, eleven cities of 50—100,000 population and sixteen cities of 30—50,000 population. The population in all other towns was below 30,000. Thus only relatively few cities are suitable for the location of plants with a large labour force. The extension of commuting which is not always desirable and the rapid expansion of certain cities may be considered as alternatives. The long-range plan for the settlement network up to the year 2000 considers the latter as the better alternative.

Far more than previously, technological linkages must be considered in locating industry. In some branches, particularly in the engineering and chemical industries, specialization and process combination serve as the most effective instruments of growth. When locating industries sensitive to the economies of linkage and combination these factors must be given greater

weight. Thus the less extreme versions of the policy of decentralization can also be considered as locational criteria.

Among the locational factors, infrastructure has grown in importance and it can overshadow all other criteria in the location and profitability of economic activities. Under Hungarian conditions, the locating of enterprises has become much more complex mainly because of infrastructural considerations. In the majority of provincial towns, water, sewage and communal facilities are still inadequate. Although the fourth Five-Year-Plan (1971—75) includes the much faster expansion of infrastructure among its major objectives, it is to be expected that the differential level of infrastructural development will remain for some time to come a strong selective factor among settlements considered for the location of certain industries.

In the production of consumer goods, but particularly in the service sector, market locations are more and more attractive. If one adds that the emphasis on production linkages also means increased market orientation, the significance of this factor emerges even more strongly. The fact that process-combination, infrastructure, and market together appear to be the strongest agglomerative forces today should be taken into account in the location of industry.

The modification of transport structure creates new opportunities for industrial location. Due to the short distances in Hungary the importance of motor transport is growing. The more rapid development of processing industries combined with the increased use of motor transport have also helped change the locational criteria as some branches become less dependent on the railways.

While retaining some direct control, the introduction of indirect methods in the sphere of economic management also signals a new stage in economic development. This has several new consequences with respect to location. The earlier system of investment has changed. Today the government decides on the location of so-called major industrial projects only, that is, major projects in key industries, such as large power stations and chemical combines. Companies, by having control over their so-called developmental fund and through long-term loans, are thus able to decide on the location and expansion of plants under their jurisdiction. The new circumstances necessitated the increased employment of industrial preferences such as tax policy, low interest rates, investment support in preferred areas, and funds for the removal of certain factories from Budapest and for the establishment of industry in presently underdeveloped regions. Preferences, therefore, have become important locational criteria in Hungary.

The attempts at integrating the food production cycle have also brought new problems and new criteria into locational considerations. The need for closer vertical combinations between agricultural production from large-scale farm units and the processing of their products is even more apparent. Transport factors must be increasingly taken into account, and this will regionally polarize the food industry either close to agricultural production or close to markets.

Apart from the theoretical implications, the investigation of the factors and criteria of industrial location involves a number of practical aspects as

well. An up-to-date, scientifically based location cannot be selected without a full knowledge of all locational factors. When choosing locations one must know the characteristics of the given plant and the special demands that may be placed on the location, e. g. demands on water, skilled labour, energy and production relations. On the other hand, one must obtain information on the presence or absence of locational factors or criteria at the different settlements. In other words, it is necessary to elaborate the locational criteria and to make an inventory of the locational potentialities of the different settlements.

An attempt has already been made in Hungary to categorize the locational endowments of towns and settlements that may become towns, and also to classify locational factors by industrial branches (Illés and Zala, 1962). This work took into account eleven criteria which are as follows: availability of manpower, quality of manpower, transport conditions, energy- and raw material supply, production linkages, markets, water-demand and supply, infrastructural requirements, scientific background and industrial traditions. Since factors that vary in quality are difficult to reduce to a common denominator and to express in terms of costs, a point scale system was applied. Each of the 11 factors was ranked by industrial branches, and on this basis high priority was awarded five points, and minimal need one point. This method was also put into practice in developing a long-range location model of Hungarian industry up to 1985 (Bora, 1972, Bartke, Bora and Illés, 1973). The model comprised six variations for optimizing the long-range regional location of industry according to principles of maximum efficiency, each variation representing a complete locational conception. For each variation, the mathematical program was used as technical coefficient of locational factors by branches and locational conditions by settlements. Obviously, the best solution would have been obtained by utilizing cost factors, but this was not possible partly because of deficient information basis partly through lack of time. In the program the locational factors appeared as the requirements of each branch, on the one hand, and as the potentialities of each settlement, on the other.

The results have proved that the so-called technical coefficients are of practical use, though the point scale hindered the evaluation of the program, and the results gave rise to some debate concerning a number of suitable settlements.

Locational practice has been used to partly modify the point scale. The locational needs of 64 industrial branches were stated and grouped according to ten parameters, and each parameter was ranked on a point scale from 1 to 5. Ranks were more precisely stated than previously: for instance, water-demand was stated by the quantity necessary to produce 100 forints production value; if the given branch does not demand more than 0·3 m^3 of water, it is given 1 point, if it consumes more than 5 m^3 of water, it is given 5 points and so on. The technical parameters were water-demand, energy-demand, transport-demand, labour-demand, labour quality, degree of concentration (approximately optimum scale economies which point to the settlement size required for the particular location), capital-demand, equipment-demand and degree of productivity.

The supply parameters ranged over 151 settlements and most of them corresponded with those for the branches. However, labour quality was replaced by the number of educational institutions in the settlements, concentration by settlement size, equipment by the existing industrial structure of the settlement, while productivity was not ranked at all.

REFERENCES

Bartke, I., Bora, Gy. and Illés, I. (1973): Az ipartelepítés hosszú távú területi modellje (The long-range regional model of industrial location). *Területi Statisztika*, No. 5.

Bernát, T. and Bora, Gy. (1971): Changes in the locational criteria of the different economic branches in Hungary. *Research Papers*, Dept. of Economic Geogr. and Regional Sci., Univ. of Economics "Karl Marx", Budapest.

Bora, Gy. (1972): Long-term regional distribution model of Hungarian industry. *International Geography*. Ed. by W. P. Adams and F. M. Helleiner, Toronto.

Bora, Gy. (1971): Twenty-five years of development of the Hungarian national economy. *Research Papers*, Dept. of Economic Geogr. and Regional Sci., Univ. of Economics "Karl Marx", Budapest.

Criteria for location of industrial plants (1967) Ed. by A. Kuklinski. Economic Commission for Europe, New York.

Illés, I. and Zala, Gy. (1962): Kísérlet a teljes területi iparszerkezet optimalizálására (A research method for optimizing an industrial regional structure). *Információ és Elektronika*, Vol. 1.

Kóródi, J. (1962): *A magyar ipar területi elhelyezésének távlatai* (The long-range regional location of Hungarian industry). Kossuth Kiadó, Budapest.

Kovács, T. (1974): A vidéki iparfejlesztés eredményei és sajátosságai 1960—1970 között (The results and characteristics of the industrialization of provincial regions between 1960 and 1970). *Területi Statisztika*, No. 1.

Területi tervezés, tanácsi tervezés (1972) (Regional planning, council planning). Ed. by V. Kulcsár, Közgazdasági Kiadó, Budapest.

SELECTIVITY IN BRITISH REGIONAL POLICIES FOR INDUSTRY

by

W. F. LEVER

Great Britain probably has the most active, extensive and expensive body of regional policy of any country in western Europe. Starting with non-pecuniary measures such as the Industrial Transference Board set up in 1928 to facilitate inter-regional movement of labour and the early financial measures such as the Special Areas Reconstruction Association established by the Bank of England with Government backing and a nominal capital of £1 m. in 1936, British regional policy has expanded until in the current financial year, 1973—74, estimated Government expenditure on regional policy reached £319·8 m. out of a total expenditure on trade and industry of £1916·6 m. This figure compares with the £269·1 m. spent on 'industrial innovation' (i. e. Concorde, Space, nuclear power, etc.) and £383·2 m. spent upon international trade (i. e. export credits, export promotion). The figure of £319·8 m certainly understates all regional policy spending as it excludes such items as advances to the shipbuilding industry (£128·1 m.) and assistance to the coal industry (£154·6 m.) which have marked differential regional effects as do Government grants for capital expenditure on roads, airports, docks and environmental improvement. McCallum (1973) has recently estimated that expenditure on regional policy in 1973—74 tops £400 m.

The sole purpose of the expenditure of these large sums of money has been to transfer employment from the prosperous regions of south-east England and the Midlands to areas such as Scotland, the North-East, Wales, and to a lesser extent the North-West, Yorkshire, and the South-West. As an indication of the level of success, Howard (1968) calculated that between 1945 and 1965 some 429 establishments had moved out of the south-east region, employing 250,000 people in 1966, 113 establishments had moved out of the West Midlands, employing 98,000 people in 1966 and 55 establishments had entered the United Kingdom (all but 11 going to the Development Areas) employing 72,000 people in 1966.

The use of Government funds for the purpose of transferring employment from the prosperous to the depressed regions of Great Britain has always been "selective" in at least two senses — the spatial sense and the sectoral sense. Regional policy has always been spatially selective in that certain regions have been defined as requiring Government assistance and others have not. The definition of the pre-war Special Areas and the post-war Development Areas and Development Districts has usually been based upon some threshold level of persistent (as opposed to seasonal or cyclical) unemployment. The definitional problem has always been to choose between identifying a few, closely defined black spots and risking that industrialists would

find them so unattractive that substantial financial incentives would not induce them to set up there and identifying much broader areas covering relatively attractive sites for new development at risk of leaving the real black spots untouched. The current solution has been the creation of a scale of assistance applied to 1) Special Development Areas, 2) Development Areas, 3) Intermediate Areas, and 4) Derelict Land and Clearance Areas. Thus grants to cover the purchase of new capital equipment cover 22% of cost in S. D. As., 20% in D. As., and 0% in I. As., grants to cover building costs amount to 22% in S. D. As., 20% in D. As. and 20% in I. As., and S. D. As. and D. As. receive the Regional Employment Premium which amounts to a wage subsidy of £1·50 per week for each male adult worker whilst I. As. do not. The S. D. As. are located in Central Scotland, Tyneside and Wearside, West Cumberland and South Wales and contain 8·4% of the 1971 population of Great Britain; the D. As. make up the remainder of Scotland (except Edinburgh), the Northern Region, Merseyside and Wales (except parts of Monmouthshire) and parts of Devon and Cornwall (14·1% of the G. B. population). The I. As. make up the remainder of the North-West and Yorkshire and Humberside plus, Plymouth, Cardiff and parts of North-Wales (21·7% of the G. B. population). Lastly, the Derelict Land and Clearance Areas cover parts of the Staffordshire, Derbyshire and Nottingham coalfields and contain 4·0% of the 1971 population. Thus the population of all "assisted areas" comprises 48·2% of the entire 1971 G. B. population.

More interesting from the point of view of selectivity, however, is the definition of which sectors of employment Government assistance should go to. The primary distinction to be made here is that between manufacturing activities and service activities. With some few exceptions Government regional policy has placed heavy emphasis upon manufacturing in the implicit belief that if the manufacturing sector of a region is expanding, in terms of employment or output then that region's service sector will likewise expand: conversely if manufacturing declines, so does the service sector. This belief clearly relates to the concepts of the economic base and the multiplier. The economic base concept briefly states that local or regional economies expand by increasing exports and not by increasing the volume of internal trade and that such exports are almost certain to be in manufacturing rather than in services most of which (retailing, transport, professional services, local government, for example) are unexportable. The local employment multiplier measures the total impact of an initial boost to employment in a region so that, for example, if a manufacturing firm sets up there employing 100 workers the region's total increase in employment might be 150, the additional 50 jobs being provided partly by an expansion in the service sector and partly by an expansion in the manufacturing sector. Symptomatic of this emphasis in favour of manufacturing are the concentration of capital equipment and building grants for industry in the Development Areas, the remitting of Selective Employment Tax on manufacturing employment only in Development Areas prior to 1967 and the payment of the Regional Employment Premium only on manufacturing jobs after 1967. Incentives to move service employment to the Development Areas in the post-war period have been limited to the use of Office Development Permits in the South and Midlands, the advisory

activities of the Location of Offices Bureau, grants for hotel-building in the Development Areas and the attempts to move Government jobs out of London (Hardman, 1973).

Within the manufacturing sector the types of incentive used have had selective effects at certain times although this has not always been intentional. One example of such selectivity was the operational grant equal to 30% of the total wages and salary bill of firms setting up in Special Development Areas for the first three years of operation. This measure, introduced in early 1971, had the selective effect of penalizing long-established, indigenous industry in the hardest hit areas and favouring new plants most of which were branch plants of non-locally owned companies. This labour subsidy in favour of the non-indigenous sector caused considerable resentment in some of the S. D. As., especially west central Scotland and was subsequently withdrawn.

Whenever regional policy grants have disproportionately favoured one factor of production — whether labour, land/rent, capital equipment — there has always been a belief that those industries with a proportional dependence upon that factor have contributed most to employment shifts. Prior to the late 1960's the bulk of Government finance for industry as part of regional policy was in the form of grants to offset expenditure on capital equipment and buildings. There was a feeling (e. g. Brown, 1969) that it was illogical to tip the balance in favour of capital intensive industry in the Development Areas when what was clearly required was labour intensive industry to absorb as much surplus labour as possible. Subsequently, there were doubts expressed (Chisholm, 1970) that such impressions were justified but nevertheless the balance was corrected when the proportion of Government money spent on labour subsidies (relief from Selective Employment Tax, Regional Employment Premium) in Development Areas increased at the expense of capital expenditure grants.

Despite these instances of selectivity in regional policy, however,whether intentional or unintentional, there is a considerable body of opinion in Britain which holds that current policies are far too undiscriminating in the selection of industries or companies or establishments to receive incentives to set up in the Development Areas (e. g. Wilson, 1968, Figgures, 1972). If greater selectivity is to be employed in regional policy then it is clearly necessary to identify some criterion on which the selection can be based which increases the efficiency with which Government expenditure achieves the stated aims of regional policy. It has been suggested by Thirlwell (1972) and others that regional policy is inefficient currently because much of the money pumped into depressed regions leaks away very rapidly back to the prosperous regions. Such leakages are largely the result of, say, manufacturing firms who purchase components from the South-East and Midlands for assembly in a Scottish branch plant which could equally well purchase those components from a Scottish supplier. James (1964) has provided a description of just such a situation in which a car-manufacturing plant located at Coventry in the West Midlands was induced to set up a branch plant on the outskirts of Glasgow. The cars were manufactured, however, almost solely from components hauled up from suppliers to the main plant at Coventry, although in this case there were attempts to utilize Scottish suppliers but these proved

unwilling to change production methods or become involved in a monopsonistic relationship with the car plant. Ideally from the point of view of regional policy the car plant should have purchased its components locally thereby retaining income within the depressed region.

The extent to which an industry or an individual manufacturing establishment spends its income locally, thereby creating further employment locally, or leaks it out of the local economy is measured by the income multiplier or the employment multiplier. To take Allen's (1969) simple example of the regional multiplier, if the Government invest £100 in a road building programme in a development area then the income of the construction firm rises by that £100. If the whole of this is paid in wages to construction workers who spend it all on locally-produced beer then the income of the brewery rises by £100. If the brewery buys all its inputs (hops, malt etc.) locally then the income of the farmers/maltsters etc. also increases by £100. If this hundred pounds continues to circulate within the local economy the multiplier value is infinitely high. The fact that it is not infinitely high is due to a mixture of three things — taxation, savings and leakages. At each round in the process the Government intervenes to take a percentage of the money in taxation. At each round the sector or person acquiring income may decide to save a proportion of that income thereby reducing the amount entering the next round. Lastly if any sector or person chooses to buy goods or inputs from outside the local economy then that income is leaked away.
The multiplier (K) is usually calculated as

$$K = \frac{1}{s + t + m}$$

where s = percentage saved,

t = percentage taken in taxation, and

m = percentage leaked away by purchases from outside the region.

Thus if the marginal propensity to save is 10%, the marginal rate of tax is 25% and 30% of purchases come from outside the region then the multiplier is 1·54. This means that for every £100 invested by the Government or increase in sales in region A, the total gain to region A is £154, and if we assume equal productivity per worker in value terms every initial 100 jobs created require a further 54 jobs in services and ancillary manufacturing. In terms of regional policy those industries and establishments with high income or employment multipliers represent the most efficient use of regional policy funds as they maximize the impact of the investment in the depressed area and minimize the leakage of income to the prosperous areas. Wilson (1968) and others have argued that if regional policy is to be more selective in the distribution of Government funds the multiplier might provide an excellent criterion upon which selection might be based. *(Table I)*.

If industries and/or establishments are to be selected on this basis it is clearly the value of m in the above expression which has to be estimated as the values of s and and t are unlikely to differ between industries or between establishments. If regional input-output tables were available for finely defin-

TABLE I

Multiplier by industrial sector

	Per cent of Scottish purchases	Per cent of Scottish sales	K
Glass	7·7	95·4	0·98
Paper products	13·9	91·1	1·04
Paint	37·1	78·0	1·25
Light clothing	18·8	43·4	1·37
Engineers' tools	53·6	76·2	1·38
Electrical machinery	25·2	14·2	1·69
Mean	20·0	75·7	1·14

ed industrial sectors then the identification of those industries which bought predominantly local inputs would be easy. With a few exceptions (e. g. Nevin, *et al.* 1966) such tables are not available, however, and alternative sources of data have to be found. The Ministry of Transport's surveys of road and rail freight offer a fine spatial matrix but only very crude distinctions between types of goods, so that for example all manufactured goods are grouped into one sector (Bayliss and Edwards, 1970). Studies based on location quotients and resident populations (Thorne, 1969) tend to focus on goods at the end of the production chain and ignore cross-hauling in a sort of linear programming, freight minimizing framework scarcely borne out by actual facts.

Dissatisfaction with broadly aggregated data such as these led the author to adopt an intensive detailed survey approach to the problem of identifying flows of goods across regional boundaries. Twenty-four manufacturing plants in West Central Scotland were asked to provide data on all purchase and sales transactions for the year 1970. These plants were chosen in six industries covering a wide range of product in order to test three hypotheses. Firstly, goods with a high value-to-weight ratio might be expected to travel further than those with a low value-to-weight ratio. Secondly, goods which as a result of processing increase in bulk, fragility or perishability are likely to have local customers and non-local suppliers. Lastly, industries which are spatially concentrated in a few areas of Britain are likely to have longer backward and forward linkages than those which are widely distributed. On these three criteria six industries were selected. These were glass manufacture, the production of paper products (mainly cardboard cartons), paint manufacture, light clothing manufacture, engineer's small tools production and electrical machinery manufacture.

On the basis of the data provided by the four establishments in each of these six industries it was possible to rank them by the size of the direct income multiplier. From the regional policy standpoint the most suitable industries are those which *a)* import few or none of their inputs from outside the region (Scotland) to reduce leakages and *b)* export as much as possible of their product from Scotland to draw further revenue into the region. Table I ranks the six industries by the size of their income multipliers calculat-

ed on the basis that savings amount to 10% of income, the marginal rate of direct and indirect taxation is 34% and a further term is introduced to account for cash transfers (Archibald, 1967, Brown, Lind and Bowers, 1967). Glass and paper products manufacture are clearly the worst as they import almost all their inputs and sell almost wholly to the local market (largely for reasons of bulk and fragility). The manufacture of paint, light clothing and engineer's tools yield multipliers close to the value of 1·30 which Steele (1972) calculated was typical for Scotland as a whole. A contrast can be drawn, however, between the light clothing industry which imports a high proportion of its inputs but compensates by selling widely outside Scotland and paint and tools manufacture which buy more locally and sell more locally. In this respect the higher value-to-weight ratio of clothing confirms our hypothesis relating value and linkage length. Lastly, the electrical machinery has the highest income multiplier as, although it buys only a quarter of its inputs locally the high value of the product enables it to reach a wide market beyond Scotland thereby bringing in substantial amounts of further revenue.

In quantitative terms the difference between the industries is considerable. At the extremes for every £100 of production in the glass industry in Scotland the Scottish economy profits by only £98, but for every £100 of production in the electrical machinery industry the Scottish economy profits by £169. If regional policy is to become more selective in order to become more efficient then such distinctions are important.

TABLE II

Range of multipliers by industrial sector

	Industrial mean	Highest	Lowest
Glass	0·98	1·33	0·92
Paper products	1·04	1·30	0·97
Paint	1·25	1·56	0·97
Light clothing	1·37	1·67	1·19
Engineers' tools	1·38	1·40	1·16
Electrical machinery	1·69	1·89	1·25

Table II, however, raises another issue. It may be that if the multiplier is used as the basis of increased selectivity then the industrial sector is insufficiently selective and individual establishments should be considered on their own probable merits. This table lists the highest and lowest of the four multipliers calculated at plant level in each industry. It is noticeable that whilst these maxima and minima accord roughly with the means there is a considerable overlap. At its most extreme the 'best' plant in the 'worst' industry has a higher multiplier (1·33) than the 'worst' plant in the 'best' industry (1·25). Conversely, the worst plant's multiplier (0·92) was less than half that of the best plant (1.89).

There are *a priori* two variables which might be expected to influence the buying and selling patterns of different plants within the same industry. Large firms, because of economies of scale in transport and information

collection, are more likely to be aware of distant customers and suppliers than are small ones. Branch plants of national or international companies are more likely to import inputs than are indigenous single-plant companies. In order to test whether there were significant differences between large and small plants and local and branch plants, the plants in the survey were carefully chosen to ensure that within each of the six industries there was a large local, a small local, a large branch and a small branch.

Table III broadly confirms our first hypothesis which related size and linkages. The twelve large plants did buy less locally and sell less locally than their small counterparts. However, the differences in inputs and outputs largely balance out when the multiplier is calculated on the same basis as before. Large plants which buy very few inputs locally leak income out of the region but bring it back by selling more of their product outside Scotland. As a result the multipliers of the large (1·16) and the small plants (1·13) are not significantly different from one another.

TABLE III

Multiplier, size of plant and origin of plant

	Per cent of Scottish purchases	Per cent of Scottish sales	K
Large plants	18·4	69·4	1·16
Small plants	27·5	85·3	1·13
Mean	20·0	75·7	1·14
Indigenous plant	23·7	87·9	1·09
Branch plant	18·5	65·1	1·22
Mean	20·0	75·7	1·13

Of more significance, however, is the distinction between locally-owned firms and branch plants of non-locally owned firms. Whilst the latter it is true do not buy many of their inputs from the local economy they more than compensate for this by their greater volume of exports than the indigenous firms which conform largely to the stereotype of the local businessman 'satisficer' concept. As a result a £100 rise in income in the indigenous sector yields a total benefit of £109 but a similar rise in the non-indigenous sector yields a total benefit of £122.

CONCLUSION

We have shown that the use of Government funds and incentives to decant employment from the prosperous to the less prosperous regions of Great Britain has always been selective. It has been spatially selective, constantly

reassessing differing regional needs. Certain sectors of employment have been deliberately chosen as suitable for manipulation in regional policy and some sectors of industry have by chance been differentially affected because of differences in ownership or factor mix. There is now, however, a body of opinion which believes that current and past policies have not been sufficiently discriminating and much of the income pumped into the depressed areas has rapidly been lost from them by leakages. If regional policy is to become more selective in the cause of increased efficiency then the income multiplier may provide a very useful guide to those industrial sectors and even those individual plants which may be particularly suitable for movement to or creation in the Development Areas.

REFERENCES

Allen, K. J. (1969): The regional multiplier: some problems in estimation. In S. C. Orr and J. B. Cullingworth: *Regional and urban studies.* Allen and Unwin, London, 282 p.

Archibald, G. C. (1967): Regional multiplier effects in the United Kingdom. *Oxford Econ. Papers*, N. S. 19, pp. 22—45.

Bayliss, B. T. and S. L. Edwards, (1970): *Industrial demand for transport.* For the Ministry of Transport. HMSO, London, 162 p.

Brown, A. J. (1969): Impact of investment grants on capital industry. Appendix J. *The intermediate areas : Report of a Committee of inquiry under the chairmanship of Sir Joseph Hunt.* Cmnd. 3998. London, HMSO.

Brown, A. J., H. Lind and J. Bowers (1967): The 'Green Paper' on the development areas. *National Instit. Econ. Rev.*, 40, pp. 26—33.

Chisholm, M. (1970): On the making of a myth: how capital intensive is industry investing in the development areas? *Urban Studies*, 7, pp. 289—293.

Figgures, Sir Frank (1972): Planning for industry in the regions. *Paper presented to symposium on regional planning*, University of Glasgow.

Hardman, Sir Henry (1973): *The dispersal of Government work from London.* Cmnd 5322. HMSO, London, 229 p.

Howard, R. S. (1968): *The movement of manufacturing industry in the United Kingdom.* 1945—1965. For the Board of Trade. HMSO, London, 50 p.

James, B. G. S. (1964): The incompatibility of industrial and trading cultures. *Journ. Indust. Econ.*, 13, pp. 90—94.

McCallum, J. D. (1973): U. K. regional policy, 1964—72. In G. C. Cameron and L. Wingo; *Cities, regions and public policy.* Oliver and Boyd, Edinburgh, 337 p.

McCrone, G. (1969): *Regional policy in Britain.* Allen and Unwin, London, 280 p.

Nevin, E. T., A. R. Roe and J. I. Round (1966): *The structure of the Welsh economy.* University of Wales Press, Cardiff, 52 p.

Steele, D. B. (1972): A numbers game (or the return of the regional multipliers) *Regional Studies*, 6, pp. 115—130.

Thirlwell, A. P. (1972): Letter to '*The Times*' 5th April, 1972.

Thorne, E. M. (1969): Regional input-output analysis. In S. C. Orr and J. B. Cullingworth; *Regional and urban studies.* Allen and Unwin, London, 282 p.

Wilson, T. (1968): The regional multiplier. *Oxford Econ. Papers*, N. S. 20, pp. 374—393.

INDUSTRIAL MOVEMENT, RURAL AREAS AND REGIONAL POLICY

by

D. J. SPOONER

Regional policies evolved in Britain have focussed upon attempts to move manufacturing industry from the prosperous 'central' areas of South-East and Midland England to a varying set of 'peripheral' problem areas. The latter include not only several depressed urbanized industrial regions, usually based on major coalfields, but also broad rural areas, with much lower population densities. This paper examines some of the problems that these rural peripheral areas face in attracting industrial movement.[1] The major rural areas considered are those currently benefiting from regional policy through 'assisted area' status — Scotland outside the Central Lowlands, much of Northern England, Wales outside the industrial South, and the South-West Peninsula.[2] To facilitate utilisation of the major data source on recent industrial movement in Britain, the area boundaries used are those of the survey by Howard (1968) *(Fig. 1)*.

Gaskin (1972) considered that these 'remoter rural areas' could be defined as those which had *not* been industrialized. In such areas the problems of industrial contraction, which dominate the depressed coalfield conurbations, are confined to a few isolated settlements heavily dependent on a single struggling industry or enterprise. Plymouth with its declining dockyard, the slate quarrying settlements of North Wales, and the small Cumberland coalfield towns, are examples. The rural periphery faces problems arising from the declining manpower needs of agriculture, lack of alternative employment, low population densities, emigration, and seasonality of activity. Such problems vary in intensity within and between the areas concerned, but in all these regions the consensus of opinion favours industrialization as remedial action, to diversify employment opportunities and check depopulation.

In the past tourism has sometimes been seen as the panacea for rural economic problems, but many areas show increasing disillusionment with the benefits to be derived from this industry, especially in direct employment growth (House, 1972). For example, the West Cornwall study (Cornwall County Council, 1970) noted absolute decline in service employment in its area after 1963 and concluded that the holiday industry was less useful in

[1] Although there are considerable variations in the precise working definitions of industrial movement used by different workers, most are agreed that industrial movement takes two forms: — 1) the wholesale 'transfer' or 'relocation' of a firm's existing activities from one location to another, 2) the establishment of an additional unit or 'branch' in a new location by a firm, without closure of its existing activity. Definitional problems are summarized by Keeble (1971).

[2] Northern Ireland was not included because of the extraordinary socio-political conditions and separate administrative framework affecting that province.

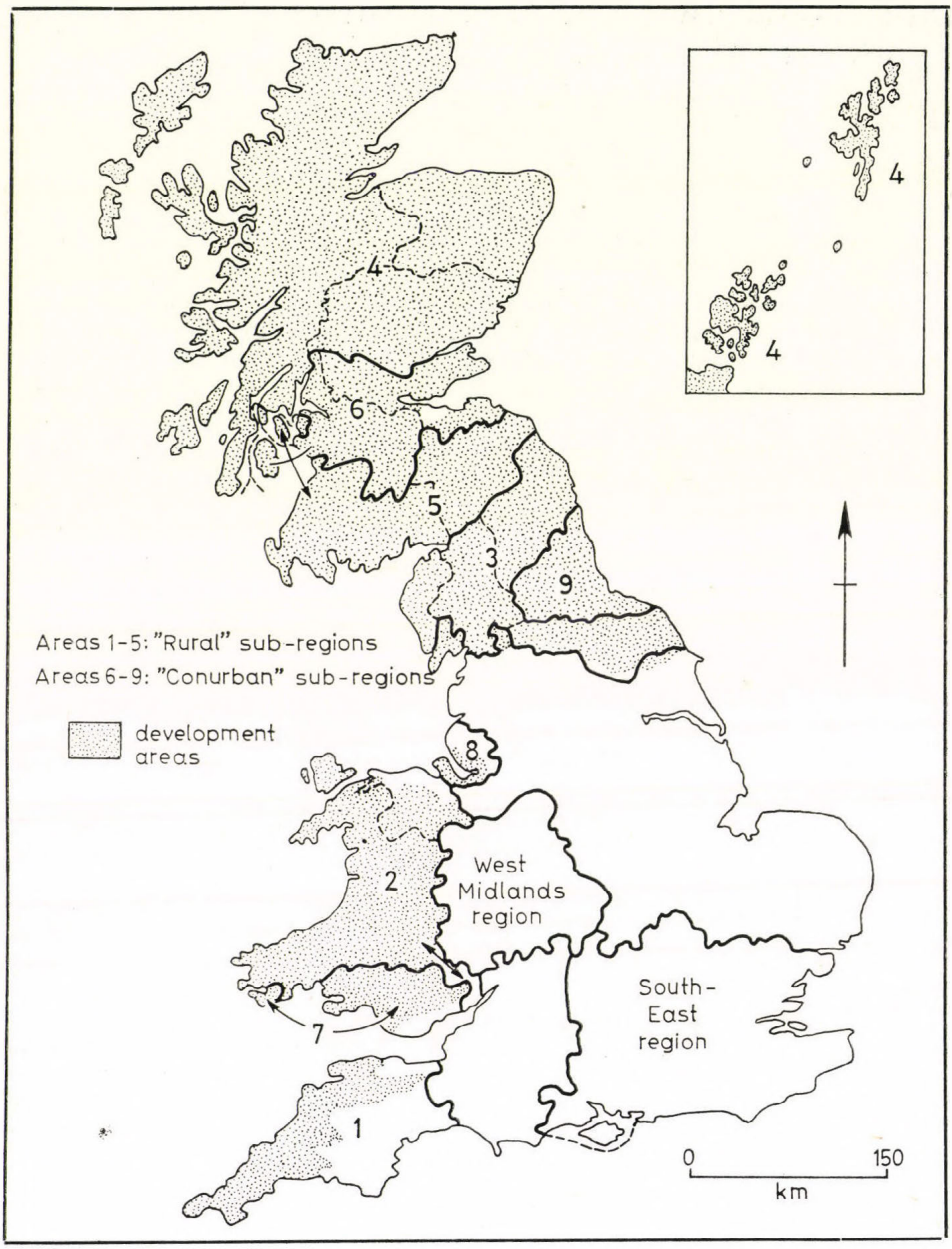


Fig. 1. Areas used in recording movement of firms (after Howard, 1968)

generating employment growth than expected. A large proportion of additional jobs created by tourism were taken by migrants to the area, and the industry was providing less than its share of career opportunities and training likely to retain young people; in both respects it compared unfavourably with manufacturing. It would seem that tourism at best can provide only a partial solution to the problems of the rural periphery.

It is generally considered that industrialization of rural peripheral areas must proceed principally by attracting mobile firms from other regions. As industrial moves imply deliberate locational decisions, it may be useful to review some of the influences on locational choice, and to assess the position of the rural periphery vis-à-vis these factors. Locational factors are dynamic and change in relative importance through time. Brown (1972) and Hoover (1971) both review major long term changes currently occurring in factors determining locational choice. The changes cited include:

(a) cost of physical transport of materials and goods is less important *per se*, though increased importance attaches to communication of information and speed of movement;

(b) the siting of industry in relation to natural resources is becoming less important. Access to markets is correspondingly more important;

(c) an enlargement of the geographical range within which economies of agglomeration are effective is occurring;

(d) more importance attaches to the siting of populations and amenity factors in location decisions; this reflects rising income and leisure standards, the increased importance of white collar employment and shortages of skilled and educated people who can therefore afford to be choosy about where they will live and work;

(e) particular industries are increasingly dependent on services supplied locally by other industries, institutions and public bodies — on 'urbanization economies';

(f) 'size of place' is becoming more important than choice of region, because of (e) and because of scale factors for individual plants.

To these should be added:

(g) the growing weight of regional policies and the scale of government assistance in different areas.

How do these changes affect the ability of the rural periphery to attract new industry from other regions? Several of the changes — (a) and (c) especially — suggest that inaccessibility, long regarded as a key component in the problems of peripheral areas, may be less crucial than their small and scattered populations. Chisholm (1964) has argued that in terms of measurable costs, 'the location of manufacturing is increasingly immaterial within a large and rapidly expanding area of Britain'; this may now include parts of the rural periphery.

Changes (e) and (f) are potentially detrimental. While manufacturing industries may have become much freer in their choice of location between regions, it is not at all obvious that firms are becoming increasingly indifferent about whether they locate in a sizeable urban area or in a small town or rural location (Hoover, 1971). The large scale demands for labour of many modern factories can only be supplied in large towns. And while some students argue

that linkages within many industries may be less crucial than formerly in local industrial clustering (McCrone, 1969, Keeble, 1969), others like Norcliffe (1970) argue that the growing importance of urbanization economies more than offsets this.

Empirical surveys of recent industrial movement in Britain, notably by Cameron and Clark (1966), confirm the prime importance of labour supplies in locational choice. This inevitably gives the advantage to large towns and densely populated industrial areas with numerous unemployed workers. It is true that some firms are prepared to go to small towns in rural areas, with sufficient labour for their needs but not enough for others, to minimize labour turnover rates. The E. F. T. A. Industrial Mobility Survey (EFTA, 1971) drew attention to the increasing demand among mobile firms for female labour and the readiness of such firms to exercise considerable ingenuity to recruit females from wider catchment areas in rural regions with low activity rates. Individual firms have different locational strategies, (some have none at all) (Townroe, 1971), and some may seek to colonise a remote area in order to create an economic and social environment which they can dominate. But the conservative, risk reducing attitudes of most decision makers (Pred, 1967, Richardson, 1969) suggests that such firms will continue to be a minority.

Much existing manufacturing in the rural periphery is based on local resources, processing products of agriculture or forestry. The diminished role of natural resources in industrial location (b) suggests little prospect of attracting many more industries of this genre. There are exceptions: for example, Matthews, Philip and Comming (1972) list several recent developments in Scotland and Northern England processing home-grown timber. But most conclude with House (1972) that 'the rural economy notoriously offers little to firms wishing to process local products from farm, forest or quarry'. The Secretary of the Mid-Wales Industrial Development Association has ruefully noted that the theory of agriculture based industrial development 'has caused us to spend a good deal of time to no purpose' (Garbett-Edwards, 1972).

In discussing the role of 'natural resources' in industrial attraction brief mention must be made of North Sea Oil. The exploitation of this major energy resource is already making a major impact on the economy of Northern Scotland, especially around Aberdeen, with considerable stimulation of constructional activities and service industries. At the same time, the impact on manufacturing is likely to be more limited, as the oil will be largely transferred to other regions for processing and utilisation. In the short and medium term North Sea Oil will be the crucial factor in Northern Scotland's economic development, and will imply 'industrialization' of a type rather different from that with which this paper is concerned. There may also be prospects for similar developments for South-West Wales and Devon and Cornwall based on possible Celtic Sea oil sources.

The growth in importance of amenity factors in location decisions (d), through the residential preferences of key workers and management, may work to the advantage of some rural peripheral regions in attracting new industry. This has certainly been true in South-West England (Spooner, 1972b). However, although many rural peripheral areas can offer an attrac-

tive environment with fine outdoor recreational opportunities, this is partly offset by their low provision of metropolitan amenities, which make the fringes of metropolitan areas particularly attractive to the mobile management class (Keeble, 1968).

The discussion thus far suggests that on balance rural peripheral areas face considerable problems in attracting mobile industries. Great potential importance therefore attaches to the assistance these areas derive from government policies (g) encouraging industrial movement. In fact, the benefits of these policies have been diminished by the availability of the same assistance in competing areas with greater labour attractions. Competition is faced from two particular sources: firstly, the conurban parts of the peripheral areas; secondly, New Towns and overspill schemes in outer parts of the prosperous metropolitan areas of the South-East and Midlands.

Before 1958, the only parts of the rural periphery to gain from regional policies were the small isolated coalfield of West Cumberland (from 1934) and the Inverness area (from 1949). From 1958 to 1966 rural districts gained more attention — some were D. A. T. A. C. areas and Development Districts, and from 1966 the Development Areas (see Fig. 1) contained broad tracts of the rural periphery. However, of the five mainland Development Areas only the South-West lacked a conurban core with large concentrations of labour. The rural parts of the Development Areas have inevitably had difficulty in competing for mobile industry with these core areas. Analyses by Howard (1968) and Keeble (1971) show that there have been two major flows of industrial movement in post-war Britain, both emanating from the congested conurbations of the West Midlands and Greater London. The first has consisted of long distance large moves to peripheral areas of high unemployment where government inducements were available, the second of short smaller moves around the conurbations themselves. The first flow, to the peripheral areas, was directed principally to their conurban core areas. Thus of 519 moves from the West Midland and South-East to the peripheral areas *(Table I)* recorded by Howard (1968), 395 went to the four conurban sub-regions and only 124 to the remaining, predominantly rural, sub-regions. Of these 124, ninety-eight went to Wales and the South-West. Rural Scotland and Northern England had received a tiny quantity of long distance moves. Apart from the spatially favoured South-West and Wales, most rural peripheral areas had relied mainly on shorter distance moves from industrial conurbations within the Development and Intermediate Areas, particularly Central Scotland, South Lancashire and West Yorkshire.

Modifications of regional policy since 1966 have tended to emphasize aid to industrial conurbations. This was true of the Intermediate Areas established in 1969, though they were later enlarged to include rural areas in the North and South-West. The introduction of Special Development Areas in 1967 increased assistance to certain coalfields badly hit by colliery closure; only West Cumberland in the rural periphery fell in this category.

The rural periphery has also suffered from competition for mobile industry with New Towns and overspill communities. The opportunity to combine such schemes for the decongestion of the metropolitan areas of London and Birmingham with schemes to build up population and industry to more viable

TABLE I

Industrial movement to peripheral areas, 1945—65

Sub-region[a]	Total moves[b]	Approximate total employment	Total moves from S-East economic planning region	Total moves from West Midlands economic planning region
A. RURAL				
1. Devon and Cornwall	71	18,000	42	11
2. Wales	97	21,000	23	22
3. Northern England	36	8,000	9	1
4. Northern Scotland	42	14,000	7	2
5. Southern Scotland	27	5,000	6	1
Total rural sub-regions	273	66,000	87	37
B. CONURBAN				
6. Central Scotland	238	86,000	84	23
7. South Wales	188	73,000	94	37
8. South-West Lancashire	144	93,000	47	16
9. North-East England	189	82,000	85	9
Total Conurban sub-regions	759	334,000	310	85

[a] See Figure 1.
[b] Moves recorded included all those crossing boundaries mapped in Figure 1, and having more than ten employees.

Source: Board of Trade 50×50 matrix of moves, 1968.

concentrations in the rural periphery has not been taken. Most New Town and overspill schemes are intra-regional. Only two towns in the rural periphery, Plymouth and Bodmin, were among London and Birmingham's 46 overspill schemes agreed by 1970. The only parts of the rural periphery to figure prominently in overspill schemes are in Scotland, where several towns in the Borders and Highlands have received overspill from Glasgow, itself in the assisted area. The only New Town to be established in the rural periphery is Newtown in Mid-Wales, and this, with a target population of only 11,000 by the end of the 1970's, is far smaller than other New Towns.

Thus the net effect of regional and overspill policies has been to place rural peripheral areas well down the queue fighting for a limited quantity of mobile industry. Generally speaking, the rural periphery has been given no special weapons for this fight. The major exception has been the establishment of the Highland and Islands Development Board in 1965, as an executive agency of the Secretary of State for Scotland, with special direct powers to encourage rural development in the Highlands, an area deemed sufficiently distinctive in character to warrant special treatment. The Board has seen promotion of manufactures as the most urgent need, and the one most relevant to its powers (Grieve, 1972). The Development Commission also works as an agency of industrialization through the Councils for Small Industries in Rural Areas

which can aid firms, employing less than 20 workers, prepared to locate in towns of less than 10,000 population. But progress in many rural areas has relied heavily on the vigour of voluntary action groups and the efforts of local authorities, as by the five Welsh county councils who formed the Mid-Wales Industrial Development Association in 1957. All too often these agencies are outgunned by those of large industrial regions with more resources to devote to such promotions.

In summary, this review suggests that the effect of changes in the framework of factors influencing locational choices by mobile industry is, on balance, unfavourable to rural peripheral areas. Economic and spatial considerations still tend to favour large urban complexes, and this outweighs greater inter-regional indifference. Government policy apparently supports the rural periphery, but does not adequately counterbalance the advantages of industrialized depressed areas.

Despite this generally pessimistic picture, some parts of the rural periphery have achieved considerable success in attracting industrial movement. The remainder of this paper examines in more detail recent experience in one of the most successful areas, Devon and Cornwall (see Table I).

DEVON AND CORNWALL

A previous survey of industrial development in Devon and Cornwall between 1939 and 1967 (Spooner, 1972a) revealed that industrial movement had produced a minor industrial revolution in the area, bringing much needed diversification to an economy precariously dependent upon pastoral farming, tourism, clay mining and ship repairing (South-West Economic Planning Council, 1967). Over 21,000 new jobs had been created in the 94 largest factories,[3] mainly in engineering, clothing and footwear, with considerable emphasis on female employment. Detailed analysis of the characteristics of these factories revealed that they tended to be more 'modern' than older factories in the area, many of which still relied upon local markets and material sources and were operated by small family firms (Spooner, 1974). However, this survey was made at a fixed time, and some re-evaluation seemed desirable in the light of possible changes between 1967 and 1973. Many of the moves had been recent — 53 since 1958, when the area first became a direct beneficiary of regional policy. It was possible that many of the moves might prove transitory, especially as the national economy had undergone recession from 1968 to 1972. The conclusions of the earlier survey might prove unduly optimistic.

Re-appraisal had two major facets. Firstly, what had happened to the earlier moves? Was closure or expansion common? Secondly, had industrial movement continued, and if so were its characteristics much as before? Unfortunately, it was not possible to repeat the detailed questionnaire survey of the earlier investigation (Spooner, 1972a), and information was derived

[3] Including only factories employing 30 or more workers in 1966.

mainly from official sources. It was therefore not possible, except in a handful of cases, to compare employment figures for individual factories at different dates, such data only being obtainable direct from firms.

(a) *Closure and expansion*

Only nine of the 94 factories had closed by late 1973. These were mainly small size, none employing more than 250 in 1966. In total at 1966 employment levels about 1,000 jobs were lost. With so few cases one cannot generalize about causes of closure. Some of these firms made public statements about problems of inaccessibility, but in most cases location *per se* does not seem to have been crucial. Five of the closures were branches and four were transfers; this is insufficient evidence to support any popular notion that branches are especially vulnerable to closure during recession, as firms concentrate production at parent factories. The most disturbing feature of the closures is that seven were factories established in Development Districts between 1960 and 1966. This was more than one fifth of all such factories (33) and involved a loss of 700 of 4,000 jobs created. A few firms in this period may have been lured by cash incentives to make inadvisable moves.

Evidence from 25 factories in Devon for the short period 1966 to 1970 showed that 15 had expanded employment, with the remainder static or slightly declining. More general evidence of expansion in the period 1966 to 1973 was the continuing trend for factories that had previously moved into the area to establish secondary branches. Multi-branch firms are common in this area; the dispersed population of a rural area encourages firms to take work to the workers, especially to the less mobile female workers. Seven firms had established additional factories since 1967. Particularly important were large new factories established by Plymouth based industry. The growth of manufacturing in Plymouth and the establishment by some firms of secondary branches in other towns can be seen as a 'trickle-down' effect from the Plymouth 'growth centre' to a wider area.

There are also indications that some firms are moving by stages into this area. The first stage is establishment of a branch in the area; the second stage, closure of the parent plant and complete transfer. Several such cases were noted by the earlier survey (Spooner, 1972b). One of the largest moves to the Development Area since 1966 has been of this type. A further stage in this process has been illustrated by the recent announcement of the decision by A. M. P. Ltd. to move their company headquarters from Middlesex to Exeter. It had established a factory in North Devon in an earlier move. These types of change, with firms shifting the balance of their operations progressively to the South-West, are encouraging evidence of the viability and expansionary tendencies of many of the moves to the area.

(b) *Movement, 1967—73*

Official data[4] showed that industrial movement to Devon and Cornwall had accelerated. D. T. I. data indicated 107 moves between 1966 and 1973, creating 10,280 jobs. Exact comparisons with earlier periods are invalid because of changing definitional bases,[5] but we can note that Howard (1968) registered 71 moves between 1945 and 1965 giving 18,000 jobs, while Spooner (1972a) found that the first phase of regional policy in the area, 1958 to 1965, produced 5,600 jobs in 41 factories. The figures suggest that moves have become more frequent and that the factories established are generally smaller in size. As many factories have barely been completed the size difference may prove illusory, but many of the more recent moves have occurred to small towns incapable of accommodating large factories. This shift in emphasis by firms is partly a reaction to the reduced availability of labour in the larger towns arising from their past success in attracting new employment. It is also partly due to planning policies. Devon C. C. have attempted to integrate their industrial development policy with the projected settlement pattern of the Devon County Development Plan (Devon County Council, 1964). Having achieved considerable success in attracting industry to the 'sub-regional centre' Barnstaple, and 'key inland towns' like Bideford and Great Torrington, they are steering developments increasingly to lower order 'key settlements' like Dolton, North Tawton and Winkleigh, (generally below 3,000 in population). Particularly in North and Mid-Devon many such villages are too remote from large centres to feel direct benefits from their industrial growth.

Policies of the English Industrial Estates Management Corporation of building small 'advance' factories in needy localities is exercising a similar influence towards small scale development. The major criterion for factory building by the Corporation has always been provision of employment in unemployment 'blackspots': 'the unemployment rate, possible redundancies, jobs in prospect in the locality, the availability of existing factories and of suitable sites are all taken into account in deciding where to build advance factories' (Grant, 1973). Thus the choice of locations for advance factories in the South West has emphasized remote and difficult localities *(Figs 2* and *3)*. Thus, although advance factories have been allocated in the area since 1964, Plymouth, recommended as the regional growth centre, (South West Economic Planning Council, 1967), did not gain an advance factory until 1970. Twenty advance factories have now been allocated in the region, mainly small units,

[4] Derived from personal correspondence with: Department of Trade and Industry Research Division at Bristol: Cornwall County Planning Office: C. E. W. Coleman, Industrial Development Officer for Devon County Council: the Estates and Development Valuer, Plymouth: Exeter City Planning Office: Torbay Public Works Department. The assistance given by the individuals and organisations named is gratefully acknowledged.

[5] The D. T. I. included all moves in the Development Area employing 11 plus, and all those in the rest of the area employing 50 plus. Included are branch moves within the area, but not 'local rehousal'. By comparison, Howard (1968) included all moves employing 10 plus, but none within that area. Spooner (1972b), included all moves employing 30 plus, but excluded intra-urban moves.

though some have subsequently been enlarged.[6] The majority house industrial moves.

But although small moves to smaller centres have proliferated in recent years, Plymouth has continued to dominate the employment gains of the area from industrial movement. The Plymouth area[7] accounted for 45% of the new employment generated in the area by movement between 1939 and 1967.

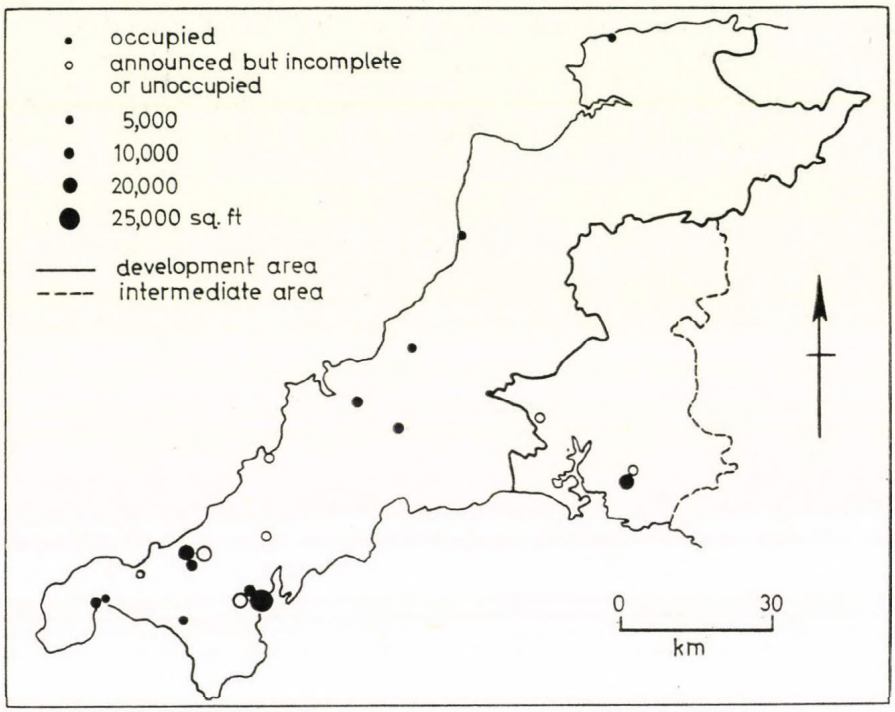


Fig. 2. Advance factories: 1964—73

From 1967 to 1973 ten new factories accounted for nearly 4,000 jobs, more than one third of those accruing in the entire area. Barnstaple was the second most successful centre in the recent phase, gaining 13 factories employing 30 or more.

Detailed information on the nature of the moves and on their sources were available for Devon, astride the boundaries of the assisted area *(Figs 4* and *5)*. Analysis of the 42 factories employing 30 or more generally confirmed the conclusions of the earlier study. For example, although branch factories

[6] By late 1973 only 14 had been occupied, and primarily because of land availability problems the Truro and Newquay factories (allocated in 1967 and 1969 respectively) had not even been started.

[7] Including the following employment exchange areas: Plymouth, Devonport, Saltash, Plympton, Gunnislake and Tavistock.

TABLE II

Types of move to Devon 1967—73 inclusive
(employing 30 workers plus)

Type of factory	Source region	No. of moves
1. Branch	*a)* South-East England	10
	b) South-West England	9
	c) Other regions	2
	d) Overseas	2
2. Transfer	*a)* South-East England	15
	b) South-West England	3
	c) Other regions	1
		42

were marginally more numerous *(Table II)*, the area had continued to attract many transfers.

Howard (1968) and Keeble (1971) have shown that from 1945 to 1965 the major part of movement to peripheral areas was composed of relatively large branch moves from the South-East and West Midlands. Spooner's earlier survey (1972b) suggested that the South-West did not fit this pattern, with numerous small and medium sized transfers from South-East England and a considerable number of branch moves within the South-West Economic Planning Region. In the more recent period, transfers from South-East England were more numerous than branches, and branch creation within the South-West Planning Region was again important (see Table II and Fig. 3). It is inter-

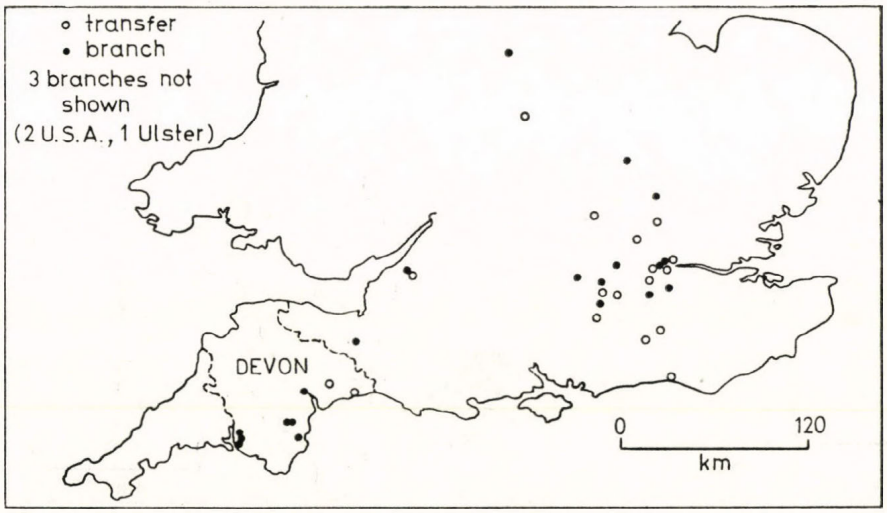


Fig. 3. Source locations for moves to Devon; 1967—73 inclusive

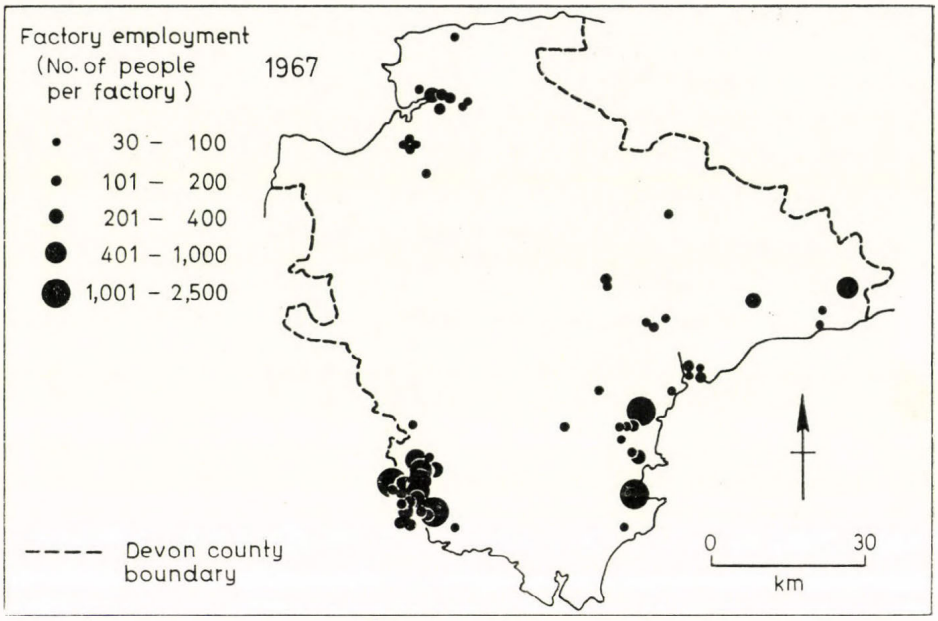


Fig. 4. Devon: industrial moves; 1939—66 inclusive, and surviving 1974

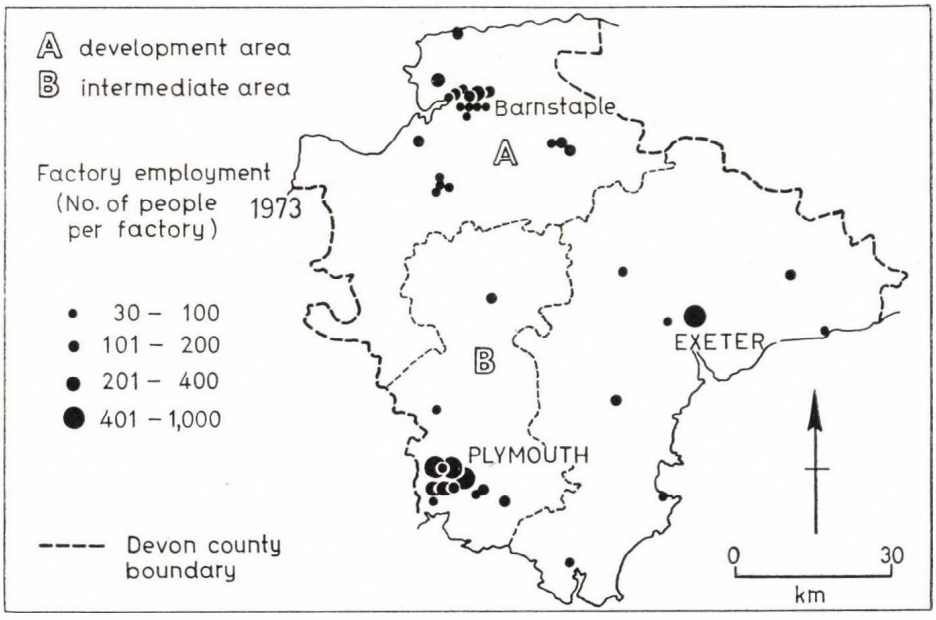


Fig. 5. Devon: industrial moves; 1967—73 inclusive

esting that of the total of 25 moves from the South-East a minority came from London itself; the majority originated beyond the Green Belt in towns like Reading, Watford and Crawley.

CONCLUSION

This brief review of the recent progress of industrial movement in Devon and Cornwall suggests that the area is building strongly on the base provided in an earlier phase. As a result the economy of the area in 1973 was healthier than for many years. Unemployment had fallen to very low levels in some districts, with labour shortages appearing. In Plymouth in late 1973 this even led to public pleas from local manufacturers that the city should cease its policy of attracting industry. The changes that are taking place in the industrial geography of the South-West do not appear to be temporary, but are creating a genuine long term transformation in the structure of the regional economy, reducing reliance on traditional sectors.

This encouraging picture of industrial growth in a rural peripheral area thus appears in contrast to the more pessimistic conclusions arising from the earlier discussion of the changing framework of locational factors. The exceptional success of South-West England appears to be based on a number of factors.

(1) Firstly, the area possesses in Plymouth (1971 population 239,452) the largest city in Britain's rural periphery. This diminishes the region's disadvantage vis-à-vis other reception areas with respect to 'size of place', labour supply and urbanization economies. Plymouth is large enough to act as an industrial growth centre, while at a smaller scale towns like Camborne-Redruth (42,084), St. Austell (32,265), Newton Abbot (19,399) and Barnstaple (17,317) are large enough to act as secondary foci of growth.

(2) Amenity factors are especially favourable to this area. The previous survey ascertained the importance of the region's environment to many of the earlier moves. Interviews with management of some of the largest firms to move in during the latest phase confirmed this finding, with particular emphasis on the importance of key workers' preferences. One London firm that transferred to Plymouth even engaged consultants to test the attitudes of its staff to moves to different areas.

(3) Industrial movement has been cumulative. The successful establishment of new industry in the area has re-assured subsequent movers as to the viability of the region for industrial development. This 'demonstration' effect has been notable in Plymouth where numerous American owned companies have been mutually encouraged.

(4) The nature of movement to this area, with transfers from the London region important, suggest that it is spatially favoured among rural peripheral areas. Movement to this area in many ways resembles that to East Anglia, described by Sant (1970), more than that to rural peripheral areas aided by regional policy. Like East Anglia, it may be becoming part of Outer South-East England.

REFERENCES

Brown, A. J. (1972): *The Framework of Regional Economics in the U. K.* National Institute of Economic and Social Research, Cambridge, pp. 3—12.

Cameron, G. C. and Clark, B. D. (1966): *Industrial Movement and the Regional Problem.* University of Glasgow Social and Economic Studies, Occasional Paper, No. 5, 220 p.

Chisholm, M. (1964): Must we all live in South East England? The Location of New Employment. *Geography*, No. 49, p. 9.

Cornwall County Council (1970): *The West Cornwall Study.* Truro, 116 p.

Devon County Council (1964) *Development Plan, Analysis of the Survey.* Exeter, 96 p.

E. F. T. A. Economic Development Working Party, (1971): *Regional Policy in E. F. T. A.: Industrial Mobility.* Geneva, 160 p.

Garbett-Edwards, D. P. (1972): The Establishment of New Industries (with Particular Reference to Recent Experience in Mid-Wales). In J. Ashton, and W. H. Long: *The Remoter Rural Areas in Britain.* Oliver and Boyd, Edinburgh, pp. 50—73.

Gaskin, M. (1972): The Remoter Rural Areas in the National Context. In J. Ashton and W. H. Long: *The Remoter Rural Areas in Britain.* Oliver and Boyd, Edinburgh, pp. 165—185.

Grant A. (1973): Parliamentary Under-Secretary of State for Industrial Development. In reply to a question in the House of Commons, March 13th. *Trade and Industry*, 10, No. 12, 623 p.

Grieve, Sir R. (1972): Problems and Objectives in the Highlands and Islands. In J. Ashton and W. H. Long: *The Remoter Rural Areas in Britain.* Oliver and Boyd, Edinburgh, pp. 130—145.

Hoover, E. M. (1971): *An Introduction to Regional Economics.* Alfred A. Knopf, New York, 395 p.

House, J. W. (1972): The Way Ahead for the Rural North East. *The Guardian*, 15th March.

Howard, R. S. (1968): *The Movement of Manufacturing Industry in the U. K.*, 1945—65. HMSO, London, 54 p.

Keeble, D. E. (1968): Industrial Decentralisation and the Metropolis: the North West London Case. *Trans. Inst. Br. Geogr.*, No. 44, pp. 1—54.

Keeble, D. E. (1969): Local Industrial Linkage and Manufacturing Growth in Outer London. *Town Planning Review*, No. 40, pp. 163—188.

Keeble, D. E. (1971); Employment Mobility in Britain. In M. Chisholm and G. Manners: *Spatial Policy Problems of the British Economy.* University Press, Cambridge, pp. 24—68.

McCrone, G. (1969): *Regional Policy in Britain.* Allen and Unwin, Edinburgh, 280 p.

Matthews, J. D., Philip, M. S. and Comming, D. G. (1972): Forestry and the Forest Industries. In J. Ashton and W. H. Long: *The Remoter Rural Areas in Britain.* Oliver and Boyd, Edinburgh, pp. 25—49.

Norcliffe, G. B. (1970): *Industrial Location Dynamics.* Unpublished Ph. D. thesis, University of Bristol.

Pred, A. (1967): Behaviour and Location, Foundations for a Geographic and Dynamic Location Theory, Part One. *Lund Studies in Geography, Series B, Human Geography*, No. 27, 128 p.

Richardson, H. W. (1969): *Regional Economics.* Weidenfeld and Nicolson, London, 457 p.

Sant, M. E. C. (1970): Age and Area in Industrial Location: a Study of Manufacturing Establishments in East Anglia. *Regional Studies*, No. 4, pp. 349—358.

South West Economic Planning Council (1967): *A Region with a Future: a Draft Strategy for the South West.* HMSO, London, 154 p.

Spooner, D. J. (1972a): *Industrial Development in Devon and Cornwall 1939—67.* Unpublished Ph. D. thesis, University of Cambridge, 320 p.

Spooner, D. J. (1972b): Industrial Movement and the Rural Periphery — the Case of Devon and Cornwall. *Regional Studies*, No. 6, pp. 197—215.

Spooner, D. J. (1974): Some Qualitative Aspects of Industrial Movement in a Problem Region in the U. K. *Town Planning Review*, No. 45, pp. 63—83.

Townroe, P. M. (1971): *Industrial Location Decisions; a Study in Management Behaviour.* University of Birmingham Centre for Urban and Regional Studies, Occasional Paper, No. 15, 128 p.

BRITISH STEEL RATIONALIZATION AND REGIONAL PLANNING

by

K. WARREN

Rationalization of industry entails a weeding out of marginal units and the concentration of capacity into bigger, better equipped plants in locations more suited to contemporary conditions of raw material supply and product marketing.

Regional planning, so often regarded in old industrial countries as almost synonymous with a concern for areas of declining economic activity, should, as planners in the socialist economies have long recognized, be equally concerned with the spatial forms taken by economic growth (Manners *et al.*, 1972, House, 1974).

In a long-industrialized country like Britain economic growth involves the elimination of old units as well as the expansion of the better located existing operations or the establishment of wholly new ones. Rationalization of the British steel industry along these lines has been recognized as essential for some fifty years. It has been underway for almost as long, although often in ways which are now seen to have been wrong or short-sighted, in some instances because the course of technical, raw material supply or marketing changes could not be foreseen, in other cases because economically irrational ends were followed. Between the end of World War II and the early 1960's British steel capacity was considerably extended and five new integrated works were added to the large number of existing operations. By 1967, when the British Steel Corporation was created as a public company to take over most of the industry, there were twenty integrated plants. B. S. C.'s operations include many old, inefficiently located plants and, as it has no insulated, firmly protected market in which to operate, it recognized from the start the urgent need for extensive rationalization. In December 1972 its so-called Development Strategy was announced, to be confirmed by the government 3 months later (Department of Trade and Industry 1973). B. S. C. is committed to spend over £300 million annually — at March 1972 prices — through to 1982/3 on new plant and the re-equipment of old units. Its effective capacity will increase to 36 million tons crude steel. Labour forces will be cut by 50,000 from the early 1973 level to a total of 180,000. By 1983 five big sites, probably containing the only integrated operations, will account for some 84 per cent of its capacity, or over 30 million tons. These will be Lackenby-Redcar on South Teesside (12 + million tons), Port Talbot on Swansea Bay (6 million tons), Newport, further up the Severn estuary (3·8 million tons), Scunthorpe in north Lincolnshire (5·5 million tons and later 6·7 million) and Ravenscraig in mid-Lanarkshire, Scotland (3·2 million tons) *(Figs 1 to 4)*.

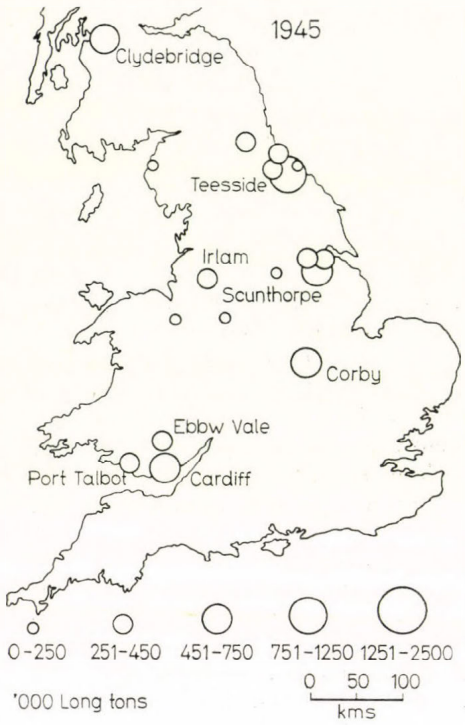


Fig. 1. British Integrated Steel Works, 1945

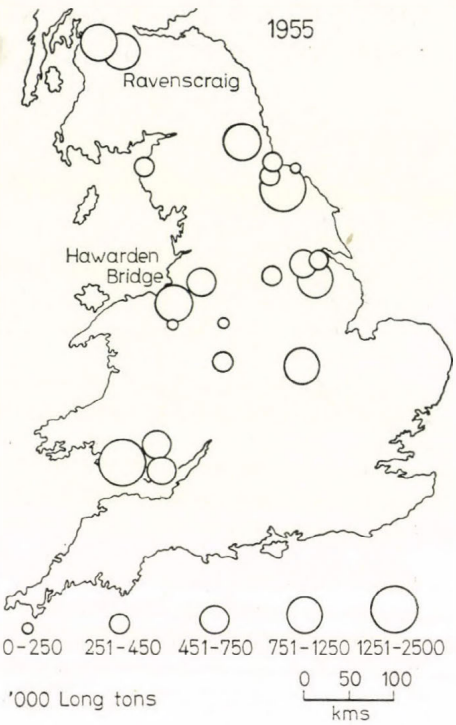


Fig. 2. British Integrated Steel Works, 1955

Localized or regional problems of labour redeployment, of the decay of old housing and infrastructure and the demand for new, the creation of industrial dereliction — all these problems are inevitable in any extensive programme of rationalization and will be created on a new and much larger scale than ever before. The increasing size of these problems has been matched by a developing social conscience, a strong concern that the impact of adjustment should be softened. Most of the units which will be adversely affected by the B. S. C. programme, though small by today's world standards, represent large commitments in terms of both investment and workforce. They are often located away from great metal or metal-fabricating complexes in regions or subregions of slow economic growth, and therefore it will not be easy to find alternative jobs. Both on social and economic grounds there is a reluctance to write these locations off, and this reluctance has sometimes been translated into political pressure for the preservation of old works and therefore, at the same time, for the rejection of newer, better locations. Britain's general economic growth rate has slowed so much that there is less scope than in the past for steel expansion on a scale which might enable more units to reach acceptable size and efficiency. B. S. C. projections suggest a British 1980 demand equal to 30 million tons of crude steel or one quarter

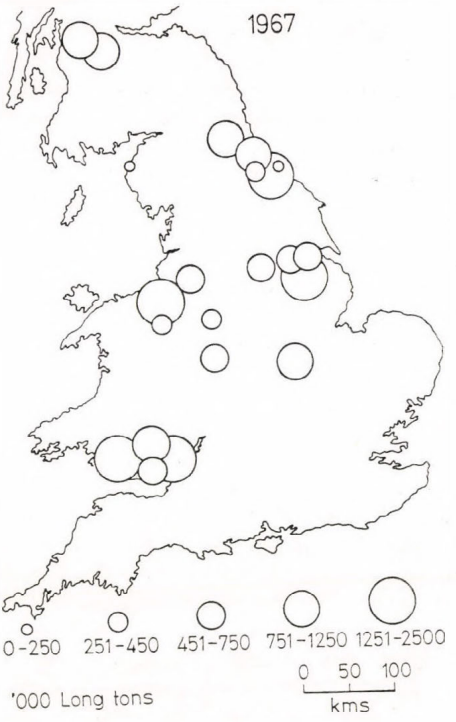


Fig. 3. British Integrated Steel Works, 1967

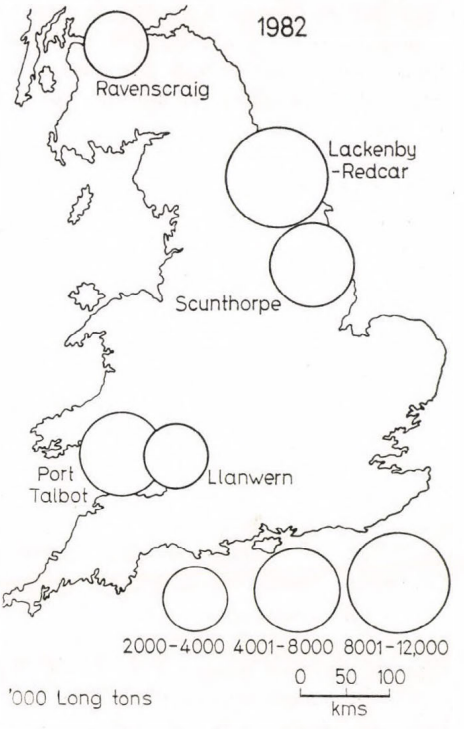


Fig. 4. British Integrated Steel Works, 1982

more than in 1970. By that time France and Italy will both probably be bigger producers than Britain. The situation is made more difficult by the manufacturing geography of the United Kingdom.

After its early start, Britain's iron manufacture was for long wholly dependent on home supplies of raw materials. After 1870 high grade ore was imported in steadily increasing tonnages but complete self-sufficiency in coking coal survived for another century. Since 1970 coking coal imports have increased but they are still small in relation to home supply. Mineral endowment and the geological build of Britain, taken along with its early industrialization, ensured a wide geographical spread of ironmaking. Coking coals and other types of coal used in early days for smelting are fairly widely spread. Coal measure ores, small deposits of high grade hematite and low grade, but very extensive bedded Jurassic ores ensured a still wider scatter of ironmaking. As a result, when the British Steel Corporation took control and began to plan for rationalization, each major ore and coal field had at least one important metallurgical operation on or near to it. Because of Britain's geological structure the coal and earliest developed iron ore districts were in the north and west, and this pattern remains emphasized in the present distribution of steel capacity. Except for the Corby works, and, in total of much greater

importance, the metallurgical operations of the West Midlands conurbation, steelmaking is concentrated in regions of Britain which are peripheral to those south-eastern and midland districts which have been her 'growth areas' since 1920. In short, rationalization in steel, which inevitably involves reduction in work forces and, ideally, complete closure of a number of plants, necessarily hits hardest those areas where general economic growth has been slowest, in which other old, basic trades are also declining or making their own painful adjustments to changing circumstances, and to which new industry can be least easily attracted. For instance, in Scotland the B. S. C. will spend £400 million, but in raising production from 3·7 to 4·5 million tons it will lay off 6,500 men and its largest plant, which will only have a capacity of 3·2 million tons, will still be landlocked, in central Lanarkshire, a district whose coal measure ores gave rise to the great ironworks boom of 1830—1850. Under these circumstances adjustment can cost a great deal in capital outlay but achievement may fall far short of ideal solutions (Warren, 1969, 1973a, 1973b).

There is another broad regional effect from an *ideal* rationalization programme in steel. For most common grades it is universally agreed that units should be big, desirably in the range 6 to 10 million tons, and that, given the indifferent mineral endowment of Britain and Western Europe, they should be based on imported, rich and, as yet, highly competitively priced iron ores. (There is of course the possibility that collaboration among producers may raise international ore prices and so make the lean ores of Europe attractive once again. This could have great long term significance but it seems less likely than with oil and in any case cannot be taken up here.) Internationally, coking coal is available in much less plentiful supply, but the quality and price of Appalachian, Australian and Polish coal points to the probability of an increasing dependence on foreign fields, especially if there is to be a general rise in demand for British coal for other uses, particularly in power stations, over the next few years. The pattern of ore and coal supply, taken with the economics of bulk oceanic transport points to the desirability of concentrating common steelmaking at a handful of deepwater sites. Natural deepwater sites are few and generally far removed from areas of established industry, from services and from steel markets. The alternative is to concentrate bulk steelmaking at a few man-made sites: involving jetties or large scale infilling to the deep channel. If this is done, it is also commercially logical to build the new tidewater works as near as possible to major markets. Japan has had great success with this policy in the central, urban/industrial zone, and more modestly the same pattern of development has been followed on the Narrow Seas cutting across the so-called industrial triangle of the E. E. C. at Bremen, Ijmiden and Dunkirk. In the not-too-distant future there will probably be other focusses there at Rotterdam and Le Havre. Britain has a mass of existing capacity to constrain B. S. C. freedom to follow suit but if it does not there is a real danger that the prime steel markets of south-eastern England may fall progressively to our E. E. C. partners, as tariffs come down and disappear and as physical contacts between the continent and Britain become easier with improved cross-channel transfer facilities and eventually with the completion of the Channel Tunnel. Having no higher

delivery charges, benefitting from physical proximity and the possibility of offering good service, and following an aggressive sales policy, continental coastal works could take a considerable share of the one quarter of British steel consumption which lies south east of a line from the Wash to Southampton Water. If a Thameside plant was built it could meet continental competition and would be able to make very substantial savings over delivery costs from Wales or northern England. Unfortunately, however, its overheads would be very high and its construction would involve still more savage rationalization in the Development Areas. This theme of the vulnerability of the London Basin markets to foreign competition is perhaps one which has not been sufficiently taken into account in the rationalization programme, or, if it has, the implications have certainly not been spelled out and debated publicly. At this point one touches on a neglected field in our industrial location policy, the boost which might be given to a major existing metalworking and engineering complex by the availability of a major local source of steel, and the long term competitive stance of London region metal-using industries as compared with those of, say, the Ruhr, or the Paris Region.

It has been suggested that construction of a new steel complex in the London region would constitute an unacceptable addition to problems of regional economic 'overheating' — shortages of labour, of infrastructure, a general straining of facilities. There is undoubtedly something to be said for this view, and similar considerations have caused the rejection for the time being of big steel development schemes for the mouth of the Maas, near Europort. However, a plant at Maplin would not present the same pollution problems as one upwind from the Rotterdam conurbation. The present almost non-existent infrastructure in the Foulness area would be made good along with the general provision for a third London Airport, a major port and associated industry. As part of such a new, overall, planned complex the investment overheads attributable to steel would be less than if the steel plant was built as a completely separate free-standing scheme. Labour supply would certainly present a serious problem in this area which has absolutely no tradition of metallurgical industry. This is a problem which may usefully be looked at in relation to steel rationalization in the nation's Development Areas.

In descending order of present capacity, the three British Development Areas with important steel capacity are Wales, the Northern Region and Scotland. They are well separated from each other and by reason both of the British 'psychology of distance' and the realities of freight charges, they are still fairly remote from the biggest steel markets, those of the West Midlands and the South-East. They lack both the massed capacity and regional outlets of the Ruhr and the nodality within Western Europe of the Nord or of the Belgian steelworks. Even Lorraine, off-centre though it is for the 'Golden Triangle', is firmly embedded in that other important E. E. C. industrial belt, the so-called 'Lotharingian Axis', and Lorraine too has a capacity well in excess of that of any British district. Each of the British steel districts has important capacity away from tidewater; indeed in the case of Scotland none of its capacity is on the coast. Even so each has an estuary suitable for deep-water ore dock and works construction — the Severn, the Tees and the Firth of Clyde. Wales and Scotland have the strong force of nationalism to back

their claims for major shares of development funds, and this force has had considerable influence on investment decisions in steel for many years.

Conflict over expansion and rationalization between the regions is accompanied by the problem of subregional diversity of interests. The B. S. C. and the government have had to try to keep each major steel district in business and, in the compromise with optimum locations which results, have been faced with the problem of moderating the impact on communities dependent on poorly placed works. In the North-East excellent site conditions, a good location for raw material assembly, along with pre-existing plant on a large scale have induced B. S. C. to choose south Teesside for its biggest development — one third of its total expenditure over 10 years for a 12 million ton complex. In the process it is sacrificing smaller centres of steelmaking on the south bank of the estuary and all the capacity on the north side, with the loss of almost 3000 jobs at Hartlepool where unemployment rates have in any case been notably higher than in the Teesside County Borough. B. S. C. will, however, run down only slowly the important but isolated, inland and economically insupportable operation at Consett. On the Firth of Clyde the biggest ore dock and coking coal terminal in Britain is being built at a cost of £30 million but there will be no major integrated steel plant nearby, whereas Ravenscraig, over 30 miles away in the problem areas of mid-Lanarkshire, will be largely extended. In Wales there are to be two steel growth points, Port Talbot and Newport. B. S. C. is to dispose of Cardiff works, and iron and steelmaking, though not rolling and finishing, will end at Ebbw Vale. In the north of Wales, Shotton, which has to rail its ore across the Wirral peninsula from Birkenhead, and which is also not well located for coal supplies, is to lose not only iron and steelmaking but also its primary rolling mills, though it will continue to operate a cold reduction mill. At Cardiff and Ebbw Vale a total of 9000 jobs will be lost, at Shotton 6500; Wales, therefore, suffering from almost one third of the total B. S. C. reduction in jobs. This rationalization scheme is logical, but only within the narrow terms of reference of the B. S. C., not within a wider regional planning framework.

Port Talbot already has been equipped with a deepwater ore dock and in this respect allocation to it of the largest share of Welsh expansion seems justified. On the other hand the more modest expansion at Newport will still leave it on the small side, and it is known that it has some units of plant which are and which may remain grossly underemployed. Newport is better placed for close integration with the West Midland metal working complex than Port Talbot. Since the B. S. C. strategy favouring Port Talbot over Newport was announced there has been another move from Welsh interests to equip Newport works with a 100,000 ton ore dock, so removing the necessity of long term rail shipment of ore on from Port Talbot. Yet even if this is accepted the disadvantage remains that the heavy outlay will not be matched by an appropriately big works extension. Major spending has been announced for the finishing operations at Ebbw Vale, but this is an indifferent location, even for finishing. Yet the run-down at Shotton, along with closure of the smaller works of Irlam and Shelton will remove all integrated steelmaking from the North-West Region, whose steel consumption is one eighth the national total, which is an important source of steel scrap and where steel plan-

ners have throughout the last fifty years recognized the desirability of large capacity. It could well be argued that the large spending at Ebbw Vale could better be used in some comprehensive Dee development scheme which would make the estuary and lower course of that river fully navigable for large ore carriers up to the superb site on which Shotton works stands and from which it is excellently located to serve both south Lancashire and West Midland markets.

The deficiencies of the British development strategy for steel may be summarized as narrow, sector planning rather than comprehensive planning, an unwillingness to think in really big terms, particularly in respect of the size of the changes required, regional partisanship and too short a time scale, long term desirable developments being avoided because in the short term they would result in distress. Instead, it is essential to think in terms of overall regional planning, to ask what is an ideal steel location pattern nationally and to pursue every effort to realise it and to seek answers to questions which seem never to have been put, at least openly. Examples of the latter are — in what form are all the extra millions of tons of crude steel from Teesside or Port Talbot or Scunthorpe to be finished?; where are they to be marketed, and by what routes and at what costs (both direct and social)? Which other industries should be cajoled or persuaded to locate or to expand near to these steel growth points, assuming they are well chosen? It is a sad reflection on our immaturity in planning that so far we have quite failed to think in terms of building up metallurgical and metalworking complexes. We express concern for the preservation of community life in Consett, Ebbw Vale or Motherwell but perhaps we could both reduce operating costs in steelmaking and improve the material well being of these poorly endowed communities if we closed the old works completely and moved the whole population to a new town built near to much bigger, well located, wholly new works. In this way Consett perhaps might provide the labour force for a Maplin plant or Motherwell for iron and steel works next to the Hunterston ore dock. If we automatically reject the idea of social engineering on this scale, we should remember first that it has been done before, though not quite so comprehensively, both in the nineteenth century and as recently as the construction of Corby works, in the mid-thirties, and secondly that failure to think radically enough may condemn the old steel communities to a slowly drawn out decline.

Academic criticism is of course too easy, and those who grapple with the complexities of real world situations must envy our paper planning. On the other hand the complications of reality should not be used to excuse short term horizons or a lack of clear, hard thinking. The planner must strive to strike a balance between maximum economic efficiency and the pursuit of such goals as social good and regional balance, but one begins to wonder whether the apparent dichotomy is not above all a matter of time scales. In other words, in the long run, society will benefit most from solutions which may appear dangerously radical now. Study of the steel rationalization programme in relation to regional planning suggests that if, *and only if*, great care is taken to minimize hardship, radical solutions *now* will justify themselves later on. The price eventually paid for not being more ruthless now, may be a continuing uncompetitiveness and slow economic growth.

REFERENCES

Department of Trade and Industry (1973): *Steel. British Steel Corporation: Ten Year Development Strategy.*

House J. W. (Editor) (1974): *The U. K. Space.* Weidenfeld and Nicholson, London.

Manners, G., Keeble, D., Rodgers, B. and Warren, K. (1972): *Regional Development in Britain.* John Wiley, London.

Warren, K. (1969): Recent Changes in the Geographical Location of the British Steel Industry. *The Geographical Journal*, 135, No. 3, pp. 343—364.

Warren, K. (1973a): The Location of British Heavy Industry — Problems and Policies. *The Geographical Journal*, 139, No. 1, pp. 76—83.

Warren, K. (1973b): The Steel Development Plan. December 1972. *Geography*, 58, Part 3, pp. 243—300.

PART FOUR

REGIONAL EVOLUTION AND REGIONAL PROBLEMS

A SIMPLE REGIONAL EVOLUTION MODEL ILLUSTRATED BY A CASE STUDY OF SOUTH WALES

by

G. HUMPHRYS

The industrial development of South Wales began early during the industrial revolution. Since then as the regional economy has evolved its internal patterns have changed and adapted to suit changing circumstances and needs. It has long been clear that many of these changes were not unique to South Wales, but were common to many regions with similar long industrial histories. They are more readily observed here, however, because of the physical geography of the region and the minimal interference of confusing factors. As a result, South Wales has being the subject of a number of studies of its changing economic and social geography. Many of these, such as the accounts of Carter (1957), Howe (1957), Humphrys (1972), Manners (1967) and Williams (1967), provide adequate or good descriptions of what has occurred. They have made available valuable empirical material, and they allow comparisons to be made with other regions similarly described. Other studies have been more theoretically biased, but have dealt with selected systematic aspects of change. The work of Humphrys (1965) on developments since 1945, and the application of transport network and development models in South Wales by McCarthy (1968), are examples of relevant economic geography studies. The work of Herbert (1972), and Davies (1972), provide examples of this kind of social geography study of the region. Such work is valuable in its own right, but does not satisfy those seeking understanding of the overall evolutionary development of South Wales or of any other industrial region. What is needed for this is a general theoretical context of regional development which would allow understanding of how the geography of a region evolves as development proceeds, and which would give an overall framework into which studies of individual aspects could be seen to fit. One possibility of providing such a context derives from a study by Lithwick and Paquet published in 1968. As urban economists, their aim was limited to finding a basis for understanding the important part played by urban foci in regional development, and they looked at a region as a structure of cities. The basis of their approach was Central Place Theory which ties cities and their hinterlands into functionally inter-related wholes. They criticized this theory, however, for providing only a *static* model of organisation. Valuable for understanding regional structure at points in time, they found it much less use in explaining the changes which occur as a region evolves. To achieve such explanation they combined ideas derived from analysis of urban spatial structure with economic development theory, to produce a model which described the dynamic development of a region in terms of city based evolution. Despite working in a Canadian context their findings have considerable relevance in

understanding the evolving geography of older industrial regions. This can be illustrated by first translating the economic model into a geographical framework, and then applying it to the case of the industrial development of South Wales.

THE LITHWICK-PAQUET THESIS

Underlying the Lithwick and Paquet account of regional development is the economists recognition of the way that primary inputs are used to satisfy society's final demands, with industry acting as a transformer between the two, converting primary inputs into consumer needs. This is shown diagrammatically in *Figure 1.* In the diagram, primary inputs include land, labour

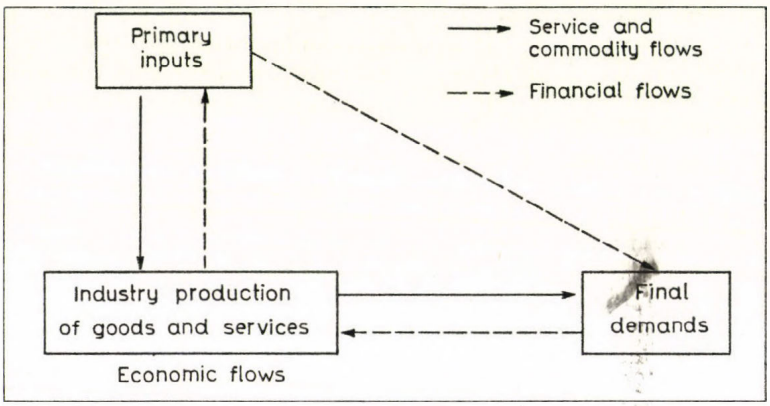


Fig. 1. Economic flows

and capital. Final demands include consumption, investment, government, and foreign demands. Industry means the production of goods and services. For subsequent discussion industry can be usefully subdivided into primary (resource based) industry, secondary (manufacturing) industry, and tertiary (service) industry.

In explaining their thesis, Lithwick and Paquet begin with a previously undeveloped region. Economic development begins when demands are made from outside the region for the resources it can provide. This leads to an accumulation of capital and labour inputs capable of meeting these demands. As demand grows and is met by increasing output, the incomes of those supplying the necessary inputs also increase, producing final demands within the region which at first will be mainly for food. Given suitable agricultural land, these food needs could be met by local production, as labour and capital saved out of rising incomes is devoted to food output. Further rises in income, however, will lead to expansion of demand for manufactured goods other than food.[1] Initially these demands would be met by the import of manufac-

[1] Engel's Law which recognizes the tendency for the proportion of income devoted to food consumption to decline as income rises was first put forward in 1895.

tured goods from elsewhere, but as labour and capital continue to accumulate, and as the local market reaches a sufficient size to allow economies of scale in local production, import replacing industries would appear within the region. As expansion of output continues, demand for services will rise, with more and more inputs devoted to the tertiary sector to meet these demands. Accompanying this growth of output, first in manufacturing and then in the tertiary sector, would be accompanying shifts in the structure of the labour force *(Fig. 2)*. At first there would be an increase in the *proportion* of the

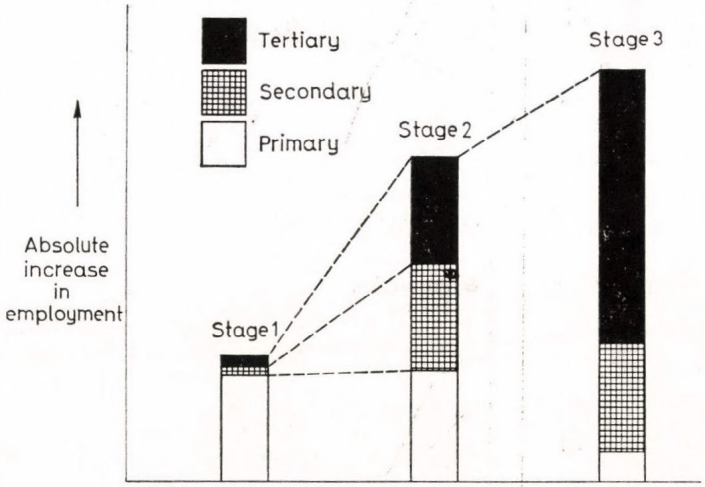


Fig. 2. The changing structure of the labour force as an economy matures

labour force employed in manufacturing and a decreasing *proportion* in the primary sector, then an increasing *proportion* in services with declining proportions in the other two sectors. Such shifts would be accelerated where technical improvements and capital accumulation in the primary and secondary sectors increased their labour productivity, that is their output per unit of labour input. Every advanced country in the Western world experienced restructuring of its labour force in this way in the quarter of a century after 1950.

TRANSLATION INTO GEOGRAPHICAL TERMS

The above account is concerned with the *economic* structure of society and as such is an *economic* model. But all societies exist in space, and it is the translation of this economic model into spatial terms that provides the basis for a geographical model suitable for the study of regional evolution. The geographical implications of the economic model are described here for a simple hypothetical region illustrated by the maps in *Figure 3*.

Before development begins the region shown in *Figure 3a* is unoccupied. It is separated from a developed region by the sea. A suitable sheltered har-

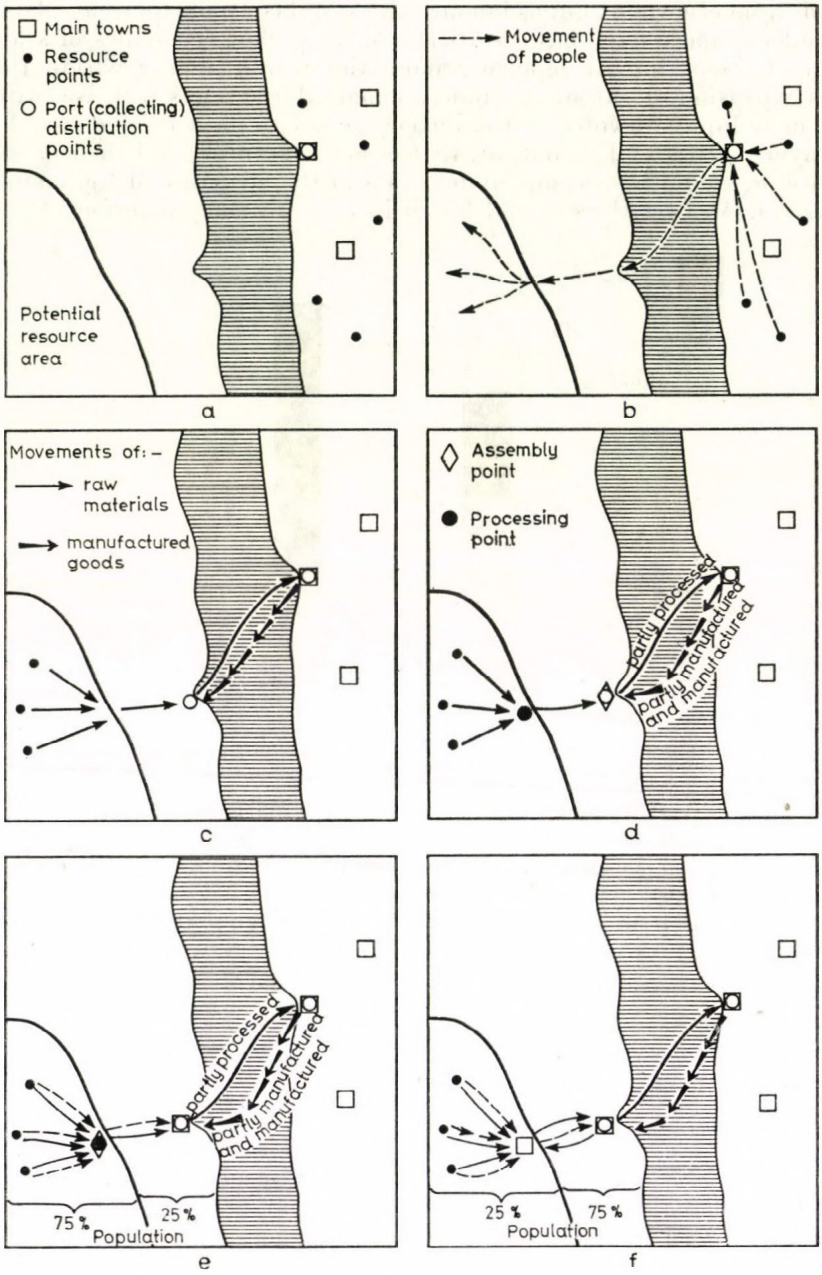


Fig. 3. Spatial changes accompanying regional economic evolution

bour is available in the new region at *A*. Good agricultural land is to be found inland, separated from the sea by land unsuited to farming. At the beginning of colonization, settlers intent upon commercial farming arrive at *A* from the developed region, move inland and set up farms in the fertile area *(Fig. 3b)*. This is the initial primary industry phase of the economists model. As the settlers become established, the spatial pattern in the resource area will consist of dispersed farms and small nucleated service centres *(Fig. 3c)*. At this early stage the major backward linkages will be with the mature region, which will supply equipment and labour for the new development. Movement of people, equipment and consumer goods to meet the needs of development will generate activity at the port *A*, and at the service centres inland. In return, resource products would move out via the service centres and the port, to markets in the mature region. At this stage economic output in the new region is firmly in the hands of the farmers, and the dominant economic activity is clearly in the primary sector. The nucleated settlements which have appeared are wholly dependent upon the demands of this primary sector, without which they would cease to be needed. The majority of the population of the new region would be associated with the farming activity, with a much smaller and dependent population living in the nucleated settlements.

As the economy develops further, important spatial changes begin to occur *(Fig. 3d)*. The import-replacing manufacturing industries of the economic model begin to appear, and are situated in the port where necessary local and imported raw materials can most readily be assembled for production, and from which all parts of the regional market can most easily be reached. The resulting increase in the size of the labour force here causes population growth and increasing consumption of locally produced food. In the inland service centres, some primary processing of farm products would take place such as the sorting and packing of fruit or the ginning of cotton. This would stimulate some population growth in these places.

In the next stage *(Fig. 3e)* growth of the regional market allows manufacturing industry in the port city to take advantage of economies of scale. It now produces goods not only for the domestic needs of its hinterland, but can also export some of its manufactured products. The resulting increased demands for raw material inputs necessitates some imports from elsewhere as well as stimulating local production. The tertiary sector expands to meet increased demands, and higher order services will concentrate in the port which is the most accessible and largest centre of the region. The region now provides an increasing proportion of its own service needs, some of which were formerly provided from the older mature region. In the resource industries, capital accumulation allows investment in new machinery which reduces the amount of labour needed per unit output. If these productivity increases outstrip the growth of output, then the absolute number of those engaged in the primary sector will fall. By the end of this stage, one or more of the more favourably placed inland service towns will also have acquired some manufacturing of the kind the port developed earlier, or will be supplying part manufactured materials to the port industries. Manufacturing now becomes a major element in the regional economy, the proportion of total

regional output contributed by the resource industries continues to decline, and service industries become more important.

In the final stage the tertiary sector now grows more rapidly to meet increasing demands for services. The resulting growth of output and employment is located in the major population centres, that is the port and the larger inland towns. This is also where the manufacturing industries are located, to take advantage of economies of scale and of the best access to intra-regional and extra-regional suppliers and customers. More and more final demand becomes focussed in the manufacturing and service sectors. Towns which remain based on the resource activity, remain small local service centres. They are likely to suffer decline as the fall in the number of people needed to produce the resource output reduces the demand for their services. This decline may be reinforced in the smallest centres as the growing affluence of rural dwellers and improved communications allow consumers to travel to higher order centres for their purchases. In this final stage the most important linkages are between the urban centres of the region. It is in these that the main suppliers of materials used are located, and where the markets are concentrated. The resource producers are now such a small proportion of the total population that they form a minor market for the secondary and tertiary industry outputs. Only a small part of the total regional income flows back to them, and the contribution of primary inputs to the economy is now very small. The urban centres are no longer dependent upon their regional hinterlands for materials for the manufacturing industries, and most of the demand for services arises as a result of manufacturing activity rather than from the primary sector. The manufacturing industries in particular will be increasingly dependent upon materials imported from elsewhere. Much of the primary sector output will be organized to supply the demands of the local urban populations. Loss of the urban markets would have serious effect on the resource sector, but loss of local resource output could be replaced by the manufacturing and service sectors by imports from elsewhere. The situation seen in stage *3c* is now reversed. It is the resource industries that are now dependent upon the urban areas which are the main markets for their produce. If the towns now cease to exist, the resource industries would at best become depressed. On the other hand, if the resource industries are depressed, the urban centres have a sufficiently mature economy to be able to draw their necessary inputs from outside the region to maintain production.

A final point to be made is that in such a model, where development through to the final stage is inhibited, for example where the resource industries remain dominant, then the classic symptoms of problem areas are likely to arise. They suffer depopulation, poor economic growth, inadequate services, and poor transport links.

The advantage of the model outlined here is that it is evolutionary and dynamic. Using such a model it is possible to interpret changes over time in such things as central place organization, and to see how transport network evolution fits in with other aspects of regional development. Similarly, through the translation of the changing structure of the regional labour force into spatial terms, it also provides a basis for understanding the evolution of some features of the social geography of a region.

INDUSTRIAL SOUTH WALES[2]

The evolution of industrial South Wales can be readily understood in terms of the evolutionary model. The basic primary resource which attracted development here was not agricultural land but coal. As a result, settlement has been urban and industrial from the beginning, with rural dispersed populations playing an insignificant role. The geology and physical geography of the region are shown in *Figures 4* and *5*. The coal measures underlie the dissected plateau, which is bounded on the south and east by lowlands and in the south-west by the sea. The higher mountains to the north are mostly uninhabited and devoted to extensive sheep farming, forming an effective regional boundary. The rivers draining the plateau run in deep steep-sided valleys, from the north towards the Severn Estuary in the south. They facilitate north-south communication, but east-west travel within the coalfield has always been much more difficult. The valleys focus at very few points in the southern lowland, a physical arrangement that has favoured the development of a limited number of major regional centres in the southern area.

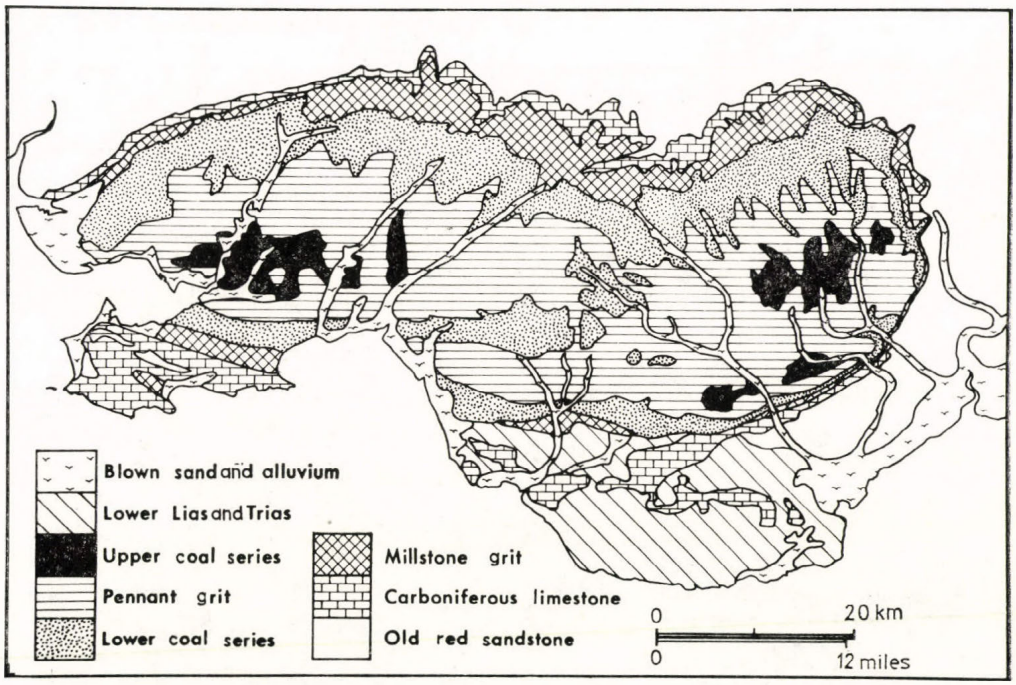


Fig. 4. The solid geology of Industrial South Wales

[2] More detailed information on the recent development of South Wales can be found in G. Humphrys, *Industrial Britain: South Wales*, op. cit.

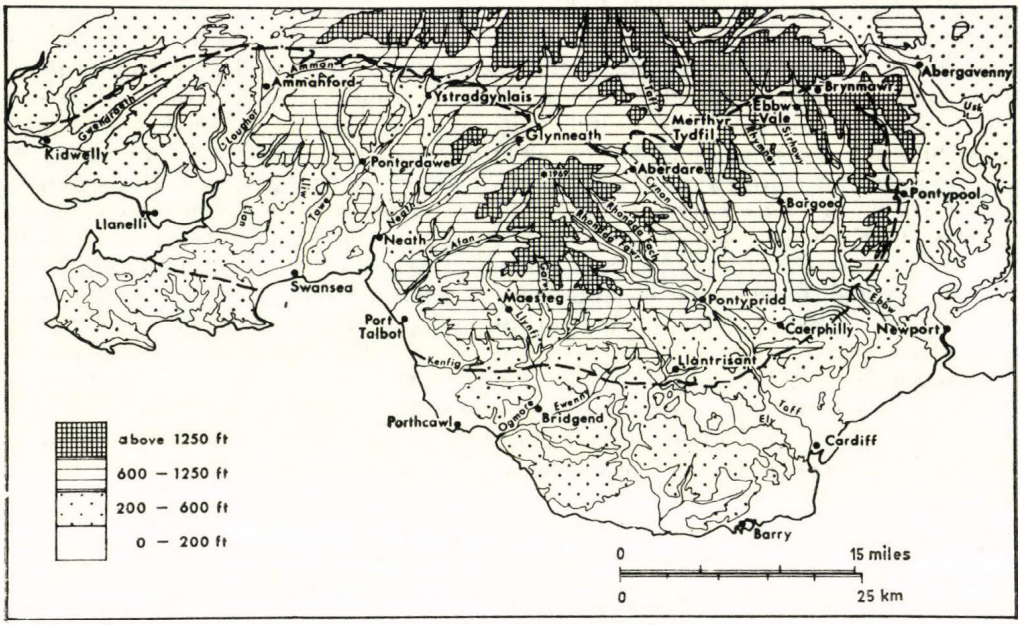


Fig. 5. The relief and drainage of Industrial South Wales

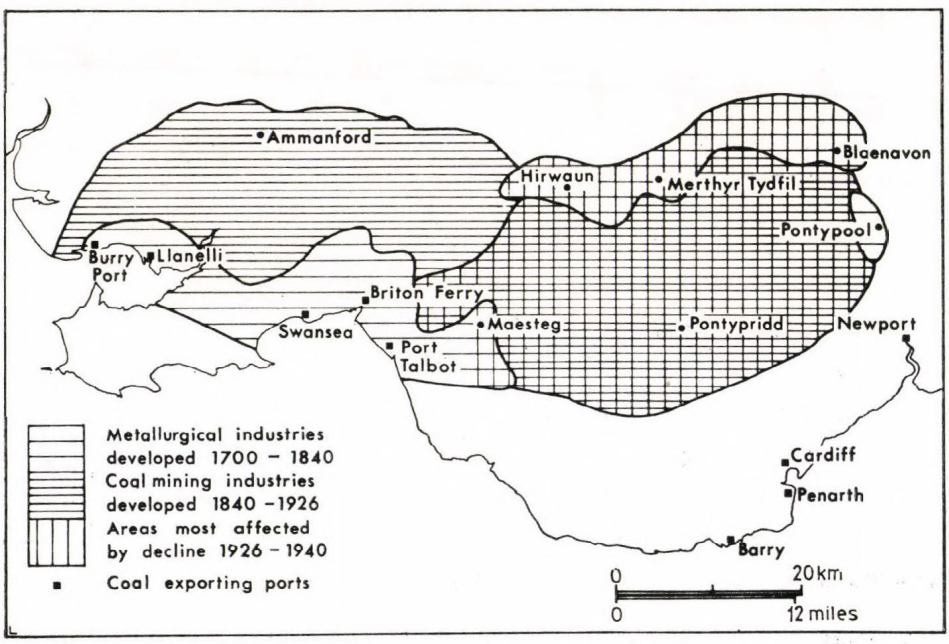


Fig. 6. The pattern of industrial development of South Wales 1700—1940

Initial economic development of South Wales was based on its coal resources. Coal seams outcropping around Swansea Bay attracted non-ferrous smelting industries at the beginning of the eighteenth century. Along the heads of the coalfield valleys east of Hirwaun, the occurrence of iron ore in the outcropping Coal Measures resulted in the development of iron smelting on an industrial scale there from 1760. In the nineteenth century, and especially after 1840, coal mining underwent a dramatic expansion. It quickly spread throughout the previously undeveloped valleys of the coalfield, first in the east where bituminous coal was found, and later, after 1880, across the western area where the coal produced was anthracite *(Figure 6)*. Coal production continued to expand until 1913 when a peak output of fifty seven million tons was achieved. Meanwhile in the late nineteenth century, non-ferrous smelting in the Swansea Bay region went into decline, and was replaced there by the development of iron smelting and later steel making as a basis for a local tinplate industry. Around the turn of the century, iron and steel making along the heads of the coalfield valleys had begun to decline, while the industry became more important in the area reaching from Cardiff through Newport to Pontypool.

As a result of these industrial developments the previously almost uninhabited coalfield areas were colonized by urban industrial settlement. Between 1870 and 1913 an estimated 400,000 people migrated into the region, which by 1913 had a population of about 1·5 million. Along the coast, ports were developed to serve the coal and metal industries of the hinterland. They exported coal and metal, and imported ores and such needs as food and timber supplies for the region. They provided the main links with overseas markets and suppliers. The main link with domestic British markets and suppliers was the railway which ran through the main southern centres of the region skirting the coalfield.

This then conforms with the early evolution stage of the model, with the resource industry being mining rather than agriculture. Within the region there was a fairly clear geographical distinction between the resource areas of the coalfield, and the service centres of the south. The latter depended upon the resource industries for their existence. This was particularly clear in the east, where the southern service centres were located off the coalfield and had no local primary resource base. By 1913 the resource industries dominated the regional economy. The associated mining and metallurgical towns of the coalfield housed the majority of the population. Each of these industrial towns was to a large extent economically independent, not only in terms of producing its own wealth but also having its own provision of such things as hospital services, gas supply and shopping centres. Because they were producing the same kinds of materials mainly for export markets, they were economically competitive rather than complementary. Despite the dominance of the resource area, even in 1913 the southern service centres had begun to acquire industry in the way described in the model. The ports engaged in local manufacturing such as flour milling and confectionery making for local markets. Materials were also being brought from elsewhere to make such things as colliery engines, and repair work of all kinds was being carried out. Up to this time, however, apart from the heavy metal industries based on

local coal supplies, there was little manufacturing developed which served markets outside the region.

The First World War merely extended this period for a short time, but then further development virtually ceased for nearly a quarter of a century. A decline occurred in demand for coal from export markets, and this together with increased use of machines reduced the labour needs of the primary industries. Under the idealized conditions of the model, the surplus labour would have been absorbed by the growth of manufacturing industries serving both local and extra-regional markets. But virtually none of this kind of manufacturing had developed in the region. As a result there was high unemployment in South Wales, averaging twenty to thirty per cent and ranging up to seventy per cent in places. Mass emigration from the resource areas in particular, resulted in a net loss of about 400,000 people from the region between 1921 and 1939. The southern centres, whose economies were based on providing some manufactured goods and services for the regional economy, suffered less from the economic decline.

The region developed through the next stage of the model between 1945 and 1960. In this period output of coal declined a little, though productivity increases caused the labour force to fall by nearly twenty per cent. At the same time an increased proportion of coal output was being consumed within the region, especially for electricity generation and steel making. The steel and tinplate industries were rationalized resulting in a marked reduction in the number of inland works as output began to be concentrated in the south. Economies in the use of coal had reduced the amount needed per ton of steel produced, and imported iron ore increasingly replaced that brought in from sources in England. This made location of new steel making capacity near the southern ports more sensible. The total labour force in the metal making industries remained almost unchanged. The manufacturing sector increased dramatically, mostly as a result of government distribution of industry policy which was especially effective between 1945 and 1951. Much of this new industry was not attracted by the locally produced coal and steel, and was not dependent upon markets within the region. Most of it used materials brought in from elsewhere, and in many cases the output was semi-manufactures sent elsewhere for final assembly into consumer goods. The service sector also expanded during this time. This was partly in response to government investment to improve public sector services. Private sector services also expanded as the growth of employment and increased earnings led to increased final demands. Service sector growth again tended to be concentrated in the largest population centres in the south. As a result of all these developments the structure of the labour force underwent marked change. Manufacturing, which employed fewer than coal mining in 1945, grew to employ as many as coal mining and steel and tinplate making combined by 1960.

Since 1960 South Wales can be seen to have moved into the final stage of the model. Coal output has fallen by a quarter, while productivity improvements have allowed the labour force to be reduced by nearly two thirds. The most important markets, taking over sixty per cent of the coal produced, are the local electricity generating stations and the metal smelting industries.

In the steel and tinplate industries, concentration of output into the coastal ports is now virtually complete, while here too productivity has advanced faster than growth of output so that the labour force has declined. Manufacturing has continued to grow, especially, though not only, within the major centres of the south of the region. Most of this growth has continued to be by industry which uses materials from elsewhere, and whose products are sent out of the region to external markets. As a result of these changes there are now more than twice as many people employed in manufacturing as in the basic industries of coal mining and steel and tinplate production. The continued growth of services, however, has resulted in their now employing

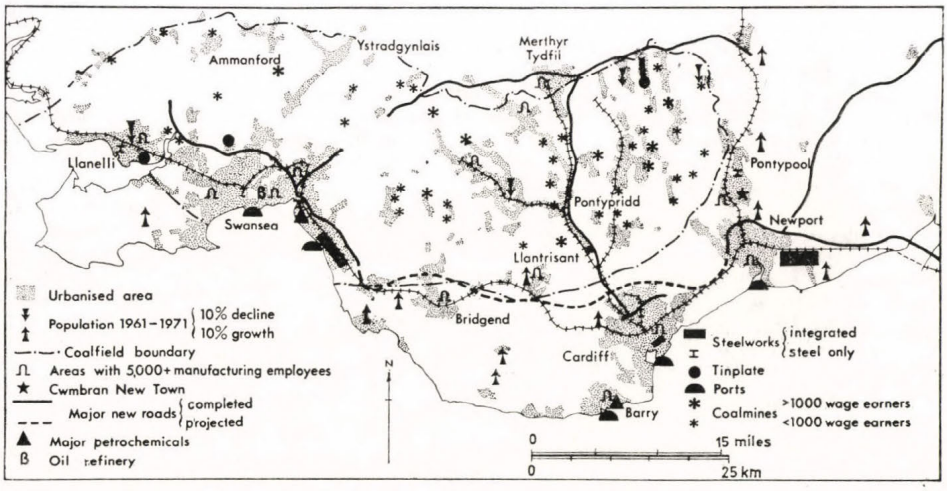


Fig. 7. Industrial South Wales 1974

over half of the total labour force. New service employment growth has continued to locate in the major centres of the south. This concentration has been added to as a result of rationalization of public sector services in particular, with the southern centres chosen for service concentration. These same places have also attracted some footloose services dispersed from London as a result of government action (Humphrys, 1973). As suggested in the model, the South Wales economy is now heavily dependent upon manufacturing and service industries, which are major markets for the original industries which initiated development of the region. With most of the economic output now located in the southern areas rather than on the coalfield, and with most of the population now located in the south as well *(Fig. 7)*, the geographical changes postulated in the model can also be seen to have occurred.

Work already done on such aspects of the geography of South Wales as the changing population distribution, transport network development and the evolution of central place structure, indicates that the model provides a framework for seeing how these inter-relate in contributing to the whole

picture. With further work it should be possible to identify subsequent stages of evolution of the model beyond those outlined here, extending the possibility of its application for prediction and planning of the future geography of regions.

REFERENCES

Carter, H. (1957): The vale of Glamorgan and Gower. In E. G. Bowen: *Wales, a physical historical and regional geography.* Methuen.

Davies, W. K. D. (1972): Conurbation and city-region in an administrative borderland: A case study of the Greater Swansea Area. *Regional Studies*, Vol. 6.

Herbert, D. T. (1972): Population mobility and social change in South Wales. *Town Planning Review*, Vol. 43, pp. 327—342.

Humphrys, G. (1965): Economic Change and regional problems in industrial South Wales. In J. Wilson *Papers on Regional Development.* Basil Blackwell.

Humphrys, G. (1972): *Industrial Britain: South Wales.* David & Charles.

Humphrys, G. (1973): Power and the industrial structure. In J. W. House (Ed.): *The U. K. Space: Resources, environment and the future.* Weidenfeld and Nicholson, p. 279.

Howe, G. M. (1957): The South Wales Coalfield. In E. G. Bowen: *Wales, a physical historical and regional geography.* Methuen.

Lithwick, N. H. and Paquet, G. (1968): Urban growth and regional contagion. In N. H. Lithwick and G. Paquet: *Urban studies: A Canadian perspective.* Methuen.

Manners, G. (1964): *South Wales in the sixties.* Pergamon.

McCarthy, T. J. (1968): *Transport network development: A comparative analysis of two models with developments in South Wales from 1840 to the present day.* Undergraduate Thesis, Geography Department, University College of Swansea.

Williams, D. T. (1967): Industrial South Wales. In J. B. Mitchell: *Great Britain: Geographical essays.* Cambridge University Press.

METHODOLOGICAL PROBLEMS OF RESEARCH INTO ECONOMIC MICROREGIONS

by

GY. KRAJKÓ

The increasing areal differentiation and development of the social and occupational structure of the population hereafter termed the social division of labour, require the investigation of economic and social processes at the level of microregions. This contributes to the precise delineation of higher order regional boundaries and to the formulation of regional development plans.

The investigation of microregions comprises three stages:

a) the study of theoretical and methodological problems connected with microregions,

b) the investigation of economic spatial structures, and

c) the delineation of microregions.

As the narrow scope of this paper precludes a detailed consideration of all the problems connected with the afore-mentioned stages we shall only consider a few of them in general terms.

THE THEORY OF MICROREGIONS

THE CONCEPT AND PLACE OF MICROREGIONS IN A REGIONAL TAXONOMY

Economic regions differ from one another not only in order of magnitude but also in function. The number of taxonomic levels that can be established depends on the size of the particular country, the state of development of the social division of labour and territorial disparities. The theoretical and the practical determination of taxonomic levels and regional boundaries are the most difficult and most debated problems of regional research.

The economic microregion is the smallest areal unit which still has the most important qualities of the integrated economic region. It is specialized and is territorially identified with an areal production complex. Within a narrower framework, it plays a role in the national structure of the labour force.

From the point of view of content microregions are identified with the lower taxonomic levels but this creates a number of theoretical problems. These concern the role of specialization, the region-forming character of settlements, the influence of natural factors, the place of microregions in the social division of labour and their connection with the various branches of the economy.

Research concerning the factors that determine the formation and development of regions and the scientific investigation of the same coincide. A different approach, however, is needed for a concrete determination of regional boundaries.

MICROREGIONS AND SPECIALIZATION

Specialization in production is a necessary requirement of the integrated economic region at all taxonomic levels.

The quantitative expression of specialization is not free from distortions and this feature varies inversely with the size of the area in question. Thus relevant data are often only suitable for illustration, and do not make it possible to detect more fundamental relationships. Indeed, the quantitative aspect alone cannot be used in every case for establishing the degree of specialization. Therefore attention must be extended to a functional investigation of specialization which comprises the following:

a) the role of specialization in the production complex,

b) the natural and social potential of the microregion, and

c) its connections with and role in the development of the given area.

The investigation of these questions is a very important part of regional research and leads to a better understanding of the essence of the region.

REGIONAL PRODUCTION COMPLEXES

Specialization develops through the close interaction among the various branches of production. No branch exists without regional associations. These associations are sometimes very loose, and appear in the common use of manpower, electrical energy, and regional infrastructure. Often, however, very close co-operation in production develops using advantageous local conditions. The regional production complex constitutes the essence, and the most important feature of the economic region without which the taxonomic levels cannot be differentiated. At the same time the two concepts cannot be identified with each other and cannot replace each other.

The branches determining the nature of specialization form the basic structure of the production complex and mould its character, territorial extent, and the strength of its interrelationships with other features.

In the investigation and delimitation of microregions the regional production associations already formed decrease in strength with distance from the central settlement. Furthermore, the influence of newly industrialized settlements on other branches of industry and on economic and social life must also be taken into consideration.

THE ASSOCIATIONS BETWEEN ECONOMICALLY SPECIALIZED AREAS AND MICROREGIONS

An economically specialized area differs in role, composition and form from pn integrated economic region. What is most characteristic is that industry alays the dominant role in the relationship between the two.

From the afore-mentioned facts it can be seen that it is impossible to consider the integrated microregion as a simple summation of economically specialized areas. Such an amalgamation is also made impossible by the different size of the areas and by qualitative differences. In addition, it is not necessary, because economically specialized areas and integrated microregions have different functions.

THE RELATIONSHIP BETWEEN MICROREGIONS AND ADMINISTRATIVE AREAS

Theoretically, economic regions dominate over administrative areas and when the two do not coincide territorially, the latter must be modified in favour of the economic region. In practice, however, unifying the two systems is not so simple.

The reform of administrative areas in the 1950's could not take regional divisions into consideration because they had not been formulated at the time. Neither did the reform create a radical rearrangement of the existing areas, so at that time economic regions could not be equated spatially at any level with administrative areas.

However, as a consequence of the economic development of recent decades the counties and districts have in a certain sense themselves become economic units and have taken on several of the functions of economic areas. It is only in Transdanubia and in Northern Hungary that there is still any large discordance between the two systems.

THE RELATIONSHIP BETWEEN POPULATION AND MICROREGIONS

Economic geography considers population to be the most important factor in production. The pace of development of the branches of the national economy, which varies spatially, transforms the composition of the population and influences the direction of migration and other demographic phenomena. Conversely the population, as the labour force influences the development of the branches of production in each area.

Some of the phenomena and problems connected with the population of microregions, for instance redistribution, migration, commuting, and increase or decrease in numbers vary according to the state of development, transport conditions, and distance from the central settlements. The trend and intensity of change can be measured and summarized mathematically. The indicators thus obtained can be used for delineating microregions as well as for the analysis of other problems.

THE SETTLEMENT NETWORK AND MICROREGIONS

The investigation of the spheres of attraction of settlements is one of the most important factors in the delineation of regions. It is especially helpful in the assignment of peripheral settlements, since spheres of attraction reflect important economic, social and cultural ties.

One frequently meets the view which over-rates the significance of spheres of attraction and holds them sufficient for delineating economic regions. This problem is especially important in the case of microregions since here it frequently happens that a microregion coincides territorially with the sphere of attraction of a centre in which case the delineation of the region is based almost entirely on it. In spite of this the two concepts must not be confused for the following reasons.

a) The substance of a microregion is much broader than that of a sphere of attraction. It emphasizes the character of the branches of production and the relationships between economic and social life. In the case of a sphere of attraction it is only the relationships between economic, social and cultural life that are summarized.

b) As regards function, the microregion is a territorial unit of production. The many different elements of a sphere of attraction, however, do not comprise such a territorial unit.

c) Spheres of attraction may change without affecting the boundaries of economic regions; for instance, with the transfer of a centre of administration, the opening of a school, or the establishment of a large store. The converse, however, is not true.

d) Within a single microregion several different centres each with a sphere of attraction may develop, which are then usually arranged hierarchically. At the same time centres of the same size and with divided functions are also often found. Therefore, in practice the two systems cannot be equated.

This does not mean that features of the two never coincide. On the contrary, very important common features exist. Both are territorial forms of economic and social activity; many phenomena therefore vary with distance from central places. It is this identity that makes it possible to use spheres of attraction as the most important factor in the delimitation of microregions.

THE RELATIONSHIP BETWEEN TRANSPORT AND MICROREGIONS

As a territorial unit of production the economic region by itself is meaningless; it can fulfil its task only conjointly with other regions. The internal and external production and transport relationships which have developed through time are the form in which regions exist and the means of their existence is the transport network. From this, it follows that an analysis of the transport network is closely connected with all the taxonomic levels of economic regions.

Rail transport generally handles the external trade of microregions but only participates in internal movements spasmodically. From this it follows that the configuration of the railway network provides little help in delimiting regions. Most road traffic is confined within microregions and increases as one approaches the central places.

In consequence of this the power of attraction of the various centres can be evaluated numerically on the basis of road traffic, especially passenger traffic. This fact can, therefore, be used as a factor in regional delimitation.

Road traffic in many respects expresses production relations, and it is therefore no more chance that it indicates both the chief direction and the territorial concentration of regional associations.

It follows from this characteristic of the road network that its influence on the internal life of microregions is significantly stronger than that of the railways. The road network and the zones of accessibility to central places expressed in terms of time are important elements in the analysis of commuting. Experience has shown that commuting is directly proportional to the attraction of central places and inversely proportional to travel time. This affects the rate of out-migration, the distribution of population, the utilization of manpower and through these the structure of agriculture.

This process varies by area depending partly on the level of development of industrial centres, and partly on the influence of other factors.

THE DELIMITATION OF MICROREGIONS

The method of delimiting microregions differs essentially from that used for other types of region. Region-forming factors can be classified into three groups:

a) factors which are essential for the investigation of the nature of regions but whose territorial variability does not reflect regional boundaries,

b) factors whose territorial occurrence is zonal and which reflect the boundaries indirectly, and

c) factors that reflect regional boundaries directly.

Factors belonging to the last two groups can be used for delimiting regions while the factors in the first group can chiefly be employed for characterizing their nature.

From among the factors with zonal character we have considered the following in our investigation.

1. The spheres of attraction of settlements. The extent of the zones developing around central places depends on their size, functions and power of attraction. Taking these into consideration we can distinguish the following spheres or areas:

— hegemonic spheres of attraction,
— dominant spheres of attraction,
— areas subject to multidirectional forces of attraction,
— areas which are indeterminant as regards attraction.

2. The geographical position of settlements with regard to transport, as with the spheres of attraction, reflects the relationships with other centres, but in this case the assignment of areas was determined on the basis of traffic attraction. In determining the transport situation we used four factors. They were:

(a) the number of bus routes and the frequency of service,
(b) the ratio of rail and bus commuters to the number of population,
(c) the amount of freight in transit through the settlement investigated,
(d) the time needed to reach the central place with the most suitable form of transport.

Combining these factors the settlements were grouped into four categories using the following formula:

$$\text{transport situation} = \frac{a + b + c}{d},$$

where a, b, c and d are the factors as defined above.

3. Mobility of population was added because the central places, depending on the degree of industrialization, may have an important influence on the development of areal differences. On the basis of population mobility, settlements can be grouped into the categories: favourable, relatively favourable, average, unfavourable and very unfavourable.

4. Owing to the lack of statistical data the number of commuters and the direction of commuting could not be considered; instead, the proportion of regular travellers out of the total was used. On this basis settlements were grouped into three categories:

— high proportion of regular travellers,
— average proportion of regular travellers,
— low proportion of regular travellers.

5. The purchase of agricultural products for the food industry and the volume of goods brought to market exhibit similar territorial differences to the factors already mentioned.

Using the afore-mentioned factors, the settlements were assigned to five spatial groups:

1. the dominant settlement of the microregion,
2. the inner zone, i.e. the zone of settlements with very close and numerous links with the dominant centre,
3. the transitional zone, containing those settlements clearly depending on the dominant centre but for which the indices of attraction vary from strong to average,
4. the outer zone, comprising those settlements whose attraction to the dominant centre is low,
5. intermediate zones: here settlements cannot be assigned to any centre on the basis of the factors used in assessing attraction.

These zones differ from each other in many essential traits. First of all, they play different roles in the division of labour which has developed between them and the dominant centres. This territorial differentiation is important as it reflects the territorial structure of microregions and makes their delimitation considerably easier.

The immediate inner zone has such close ties with the dominant centre that their mutual interdependence cannot be questioned. Regional boundaries therefore have to be sought in the outer parts of the inner zone and in the intermediate zone. For this purpose the following factors are taken into consideration:

— the sphere of attraction of the dominant centre,
— the transport situation of the settlements,
— the direction of movement of agricultural products,
— the structure of agricultural production,

— factors of physical geography, above all soils, hydrography, relief and the occurrence of minerals,
— the administrative division.

The factors here listed do not always coincide territorially, and the boundaries of the microregion are therefore determined for each settlement on the basis of the majority of the factors. The demarcation of boundaries does not fully identify a microregion, and to resolve this we must deal with territorial units rather than individual settlements.

The following features are of help when classifying microregions:

— the identification of the production profile,
— the strength of production, and communications associations,
— the attraction zones of areas belonging to the dominant centre,
— common traits in the profile of economic development, for instance, similarities with regard to problems and their solutions,
— common traits in physical geography, particularly soil, hydrography and minerals,
— administrative boundaries.

REGIONAL DIFFERENCES IN THE URBANIZATION OF THE RURAL SETTLEMENTS OF HUNGARY

by

B. SÁRFALVI

1. Parallel with the expansion of industrialization, urbanization has gained increasing ground and has grown into one of the dominant features of our times. This inevitable historical process plays a crucial part in the socio-economic progress of the developed and of the less developed countries alike.

At a historically determined period in the development of society, when the products of labour become marketable, a commodity-producing economy emerges which later evolves into a capitalist economy. The capitalist economy is founded on a social division of labour the basis of which is formed by the separation of town and village. Thereafter the whole economic history of the society revolves around this contradiction.

The various settlement types before the rise of the commodity production were characterized by a relatively high degree of economic autarchy forming more or less closed producing, distributing and consuming units. As social and areal specialization progressed the settlements gradually threw off this character, their isolation diminished and they became increasingly differentiated.

For a long historical period the relationships between town and village were characterized by slow secular change. The most important feature of this period was that the changes appeared mainly on the side of the cities, while the rural settlements played a generally passive role in the process.

In the wake of the ever rising tide of industrialization far-reaching changes commenced in the social and occupational structure of the population namely, firstly the differentiation and later the gradual integration of human activities. As for urbanization, it was finally propelled forward because of the necessity for integration.

The urbanization that ensued from industrialization caused significant changes in the nature and sizes of the various settlement forms and even remodelled their structures. While, on the one hand, the difference between town and village was enhanced by urbanization, on the other significant elements of the urban way of life and culture were being continually transplanted into the villages. This process was promoted particularly by the fact that the ties and connections between town and village were undergoing radical change.

At a given stage in the evolution of the social and occupational structure of the population related to technological level and a fundamental transformation in the nature of rural manpower, rural settlements become more powerfully penetrated by the expansion of urbanization phenomena. Indeed at the present time urbanization processes have progressed to such an extent that town and village disparities have already been eliminated. From the

foregoing it is clear that the urbanization of rural settlements and of the countryside, is something fundamental that deserves proper study and analysis.

For a long time, not only geographers but specialists in related branches of knowledge have studied the urbanization process and its diffusion through time and space from the point of view of urban settlements only. Most often these studies have confined themselves to measuring and analyzing the increase of urban population and the growth of cities. While these quantitative changes undoubtedly highlight some significant aspects of urbanization they are not suitable, by themselves alone, for reflecting the essence and complexity of the process.

These specific social formations which we call cities are closely interrelated with the whole of society, and it is only on this plane that their nature and functions can be interpreted.

2. During the first phase of industrialization and its associated features of accelerated occupational restratification, urbanization, internal migration, and the decline in agricultural population, the rural settlements of Hungary played mostly a passive part.

The rapid transition of society, however, soon made its impact felt upon the rural settlements and led to both quantitative and qualitative changes in their course of development. During the transformation of the social and areal division of labour and in the structure of the national economy, the villages were not merely sources of manpower for industrialization, but were also transformed by the tide of occupational restratification.

The various rural settlements, however, have not been affected equally by this process of transformation. A considerable number, some more rapidly than others, have assumed features characteristic of an urban settlement while others display different stages of transition.

At the same time the socio-economic transformation of a small number of rural settlements has been retrogressive. These settlements are mainly dwarf villages with populations of less than 500 which have reverted solely to agriculture, owing to the centralization of administrative functions. Meanwhile, their population continue to decrease in number at a rapid pace.

The recording and analysis of the prerequisites, factors and results of the urbanization of rural settlements can be approached from two sides. These are:

— to explore the regional differences in the process, taking into account the development of the structure of the society and economy, and

— to study, by types of settlement, the nation-wide and/or regional processes of how, to what extent and at what rate the character and style of life of the population living in each type of settlement is being reshaped.

3. The enumeration of regional differences in urbanization and the degree of variation from the general process can only be approached from the basis of nation-wide changes. The industrialization process of the recent decades has played a leading part in the socio-economic transformation of the various regions of Hungary — regardless of the economic character of the particular region, whether industrial or agricultural.

Commencing in 1949, the industrialization of the last 25 years or so can be broken down into two different phases. The period from 1949 to 1963 was characterized by the reconstruction and extensive development of existing industry and was thus concentrated in those areas which already had an industrial character. This resulted in the rapid industrialization of one quarter of the area of the country to the detriment of the remainder.

In the areas undergoing industrialization the occupational structure of the population, which was growing through the influx of migrants, changed rapidly as agricultural functions were phased out of most of the settlements. In the greater part of the country not directly affected by industrialization, occupational restratification moved forward slowly, where it occurred at all, and almost the entire population leaving agriculture migrated away from these places.

Although this first phase brought about some modest decentralization of industry, significant decentralization has only been carried out since 1963, when the labour intensive phase of industrialization was superseded by capital intensive development. This has meant a diminution in the labour attraction of the traditional industrial areas as hundreds of new plants have been established in the agricultural regions. Internal migration has consequently slowed down, and the age and sex composition of the population of the rural settlements has slowly stabilized although the occupational structure has continued to change rapidly.

The most significant influence now exerted on the rural settlements is the decentralization of industry. The village, because of its new position in the areal division of labour and because of its isolation is undergoing rapid social transformation.

During the last quarter of a century, because of large-scale out-migration, the number of active population not living in urban areas has remained more or less constant. In 1949, however, while 28 per cent of the rural labour force were employed in the secondary and tertiary sectors up to 40 per cent are now engaged in secondary industry alone. Much of the change occurring in the rural settlements is revealed by these figures, but even more insight into the intensity of the process can be obtained when it is studied within the national framework. Thus, while nearly 70 per cent of non-agricultural wage-earners resided in the urban areas in 1949, this share had fallen to a little over 60 per cent by 1973.

In other words, the occupational structure of the village population has been modified not only because of relative local change but also because the centre of gravity of the secondary and tertiary sectors has moved towards the villages on a nation-wide scale.

4. Beyond doubt, the current stage of the socio-economic transformation of the village is basically reflected in its occupational structure. However, although the transformation of the occupational structure represents the most rapidly changing single element in this complex process, it does not truly reflect the slower modifications taking place in culture and way of life.

Hence other indices should also be used in recording the narrowing of the

difference between town and village. Among these the provision of public utilities and the level of technology may be judged the most important.

In many instances progress in the provision of public utilities and services has not paralleled the growth in actual demand and in many instances the advantageous location of a settlement has been of some significance. Gas provision, for example, is much more likely in villages adjacent to the natural-gas fields or to regional gas pipelines than elsewhere.

Perhaps the intensity and depth of change in the way of life of rural society and the regional variations that exist can be more successfully grasped through the evaluation of two other factors. One of these factors casts light on the everyday living conditions of the rural population: it is the measurement and comparison of the level and structure of local consumption. Characteristic local features are reflected both in per capita general consumption and in the proportions of foodstuffs, clothing and industrial goods in total consumption. The picture revealed by these data is partly connected with the areal diversity in occupational structure and partly with the regional characteristics of the settlement network.

During recent years the average income attainable in agriculture has approached that in industry and has compensated for the former consumption lag in the agrarian areas. Significant differences in consumption levels and structures, attributable to disparities in the way of life, are not apparent between rural and urban-like settlements.

However, the proportion of white collar workers is of outstanding significance, in addition to the material and technical conditions of urbanization. For this reason, the second index relates to differences in the educational level between rural and urban populations. Though the educational standards of those living in rural settlements have advanced rapidly during the decade 1960 to 1970, there are still rather sharp disparities between town and village in this respect. These differences are partly explained by the many-sided nature of urban functions, but they are traceable also to the fact that it is the best-educated of the youth that are displaced from the villages by large-scale out-migration.

Various degrees of urbanization may thus be recorded in rural settlements according to the occupational composition and educational level of the wage-earning population, the provision of public utilities, the decentralization and structure of commerce and a last but no less important factor, the location of the given settlement. On the basis of all six factors the rural settlements may be classified into four distinct areal types.

(a) Settlements belonging to the first category develop within the zones of agglomeration associated with certain central cities as more or less integral appendages and evolve into "dormitory settlements". Their function is to remove any contradiction between the old settlement network and the new mode of production. Most of them were agricultural settlements originally and their past is still discernible in their morphology.

This form of urbanization is represented by the settlements of the Budapest agglomeration from which about 200,000 people commute daily to the capital. The occupational structure of the population of these villages is urban in character and although in outward appearance they resemble a garden-city,

their provision with public utilities and services is at a low level because of their proximity to the capital.

The settlements within the zones of attraction of the middle-sized provincial towns of Miskolc, Pécs and Győr, are similar in character, but with the difference that their agricultural features have not yet completely disappeared.

(b) Settlements within the multi-centre industrial zones comprise primarily the villages belonging to the Central Uplands. The occupational composition of the population is of urban character and 30 to 70 per cent of their inhabitants commute to work. Certain settlements in this category have the appearance of garden-cities but the majority are villages where the agricultural function remains important in spite of the progress towards occupational restratification. Some have grown into local transport and service centres.

(c) In Transdanubia and the northern areas of the country, interwoven with a comparatively dense settlement network, are some villages which by attracting central functions, have rapidly thrown off their agricultural character. In these settlements the occupational structure of the wage-earning population and the improving provision of public utilities already herald the imminent birth of new small towns. The summer resorts of the Balaton region display a unique form of development in that the provision of public utilities and commercial services is growing rapidly.

(d) The rural settlements of the Great Hungarian Plain are generally surrounded by hinterlands containing isolated farmsteads. Practically, none of the rural settlements has developed as a central place as has happened in other parts of Hungary, and this function is restricted to the comparatively dense network of market towns. Underdevelopment is reflected both in the occupational structure and educational level of the population as well as in the provision of public utilities.

Thus the degree of urbanization of the settlements may be categorized on the basis of the functions they perform as territorial and organizational units of society. The settlement is the fundamental unit of the social and areal division of labour, which provides, in different degrees according to the number of functions present, the conditions required for the productive and service activities of the population.

These functions cannot be adequately fulfilled unless the most essential activities are present. For the time being, only the urban settlements can fulfil this condition. The rural settlements, however, within the general framework of the urbanization process, will gradually catch up in this respect as administrative, productive and service functions are decentralized.

REFERENCES

Hoyois, B. (1959): La mobilité de résidence des ruraux. In: Les migrations rurales. *Premier Congrès de la Société Européenne de Sociologie Rurale.* Bruxelles—Louvain.

Klemenčič, V. (1961): Geografski problemi i metode proucavanja svakonevnog putovanja radne snage os mosta stanovanja ni rad i obratno. *Zbornik VI. Kongrese geografov. FLRJ v Ljubljana.*

Kővári, L. (1974): A főváros hatása Pest megye társadalmi-gazdasági életére. *Területi Statisztika,* 24. évf., 3. sz.

Lettrich, E. (1964): Urbanization of Hungary in the light of the occupational structure of her population. In: Applied Geography in Hungary. *Studies in Geography*, No. 2, Akadémiai Kiadó, Budapest.
Matejka, M. (1974): A településhálózat társadalmi-gazdasági dimenziójáról. *Területi Statisztika*, 24. évf., 3. sz.
Megyei Statisztikai Évkönyvek, 1972. Központi Statisztikai Hivatal.
Sárfalvi, B. (1965): *A mezőgazdasági népesség csökkenése Magyarországon*. Akadémiai Kiadó, Budapest.
Zafir, M. (1974): A mennyiség és minőség szerepe a fogyasztás növekedésében. *Statisztikai Szemle*, 52. évf., 2—3. sz.

MID-WALES: APPROACHES TO A PROBLEM AREA

by

C. THOMAS

Writing in 1776 the political economist Adam Smith maintained "The mountains of Scotland, Wales and Northumberland . . . are countries not capable of much improvement, and seem destined by nature to be the breeding countries of Great Britain" (Smith, 1776). At the time Smith referred specifically to the strength of the livestock sector in upland agriculture, yet, throughout the nineteenth century, to many it must have seemed equally appropriate to regard the northern and western parts of these islands as a huge population reservoir from which a surplus could be drained off to meet the manpower requirements of expanding industrialism.

With the benefit of two centuries of hindsight it is now acknowledged that the underlying implicit acceptance of regional imbalances does not ultimately signify that general harmony will result from free interplay of economic forces. On the contrary the past thirty years in Britain have seen a continuing, perhaps rather innocuous, debate on the nature of precise remedial action which can be taken to arrest decay in some areas and excessive concentration of activity in others (McCrone, 1969).

The characteristics of relative backwardness in the northern and western parts of the British Isles have been bracketted with those of southern Italy in the E.E.C. discussions on the establishment of a regional development fund, implying not only a similarity of problems but also of scale in their consequences in the areas concerned. Within Britain successive governments have delineated different categories of underprivileged regions and have experimented with fiscal and other policies, the aims of which have been to counteract or rectify spatial inequalities in the country's economy and society. Opposing premises in the debate gave rise to contrasting policies of either attempting to re-locate or direct future industrial growth points to areas of high unemployment or alternatively to facilitate the movement of surplus labour to districts or sections of the economy suffering shortages. Both approaches attracted heavy criticism, but it must be admitted that neither has seriously sought to deal with backward *rural* areas, as opposed to the older industrial coalfield complexes, the structure of which is more in keeping with the nineteenth century than the present day.

Many, if not all, of the fundamental issues facing backward rural districts in Britain find clear expression in Mid-Wales, where some unique cultural features intensify both the general problems and possible methods of their eradication. Illustrating the facts that the problem is neither exceptional nor new in Britain, a concise statement was made a decade ago in the Beacham Report (Beacham, 1964). The authors, an economist, a geographer and an

industrial public-relations officer, stressed that the theme and title of their report was in reality only the end-product of many other prolonged trends and characteristics in the area, defined as the counties of Cardiganshire and Merioneth facing westwards to Cardigan Bay, and those of Breconshire, Radnorshire and Montgomeryshire, orientated eastwards to the English Midland Plain *(Fig. 1)*. At that time data availability had emerged as an impediment to rigorous analysis of any of the root causes of decline, while administrative and physical fragmentation handicapped studies in depth. With 40% of its land comprising bleak uplands lying over 1000 feet above sea level, the ecological and economic marginality of farming, a traditional mainstay of mid-Wales employment, had been strongly apparent for over a century. Indeed

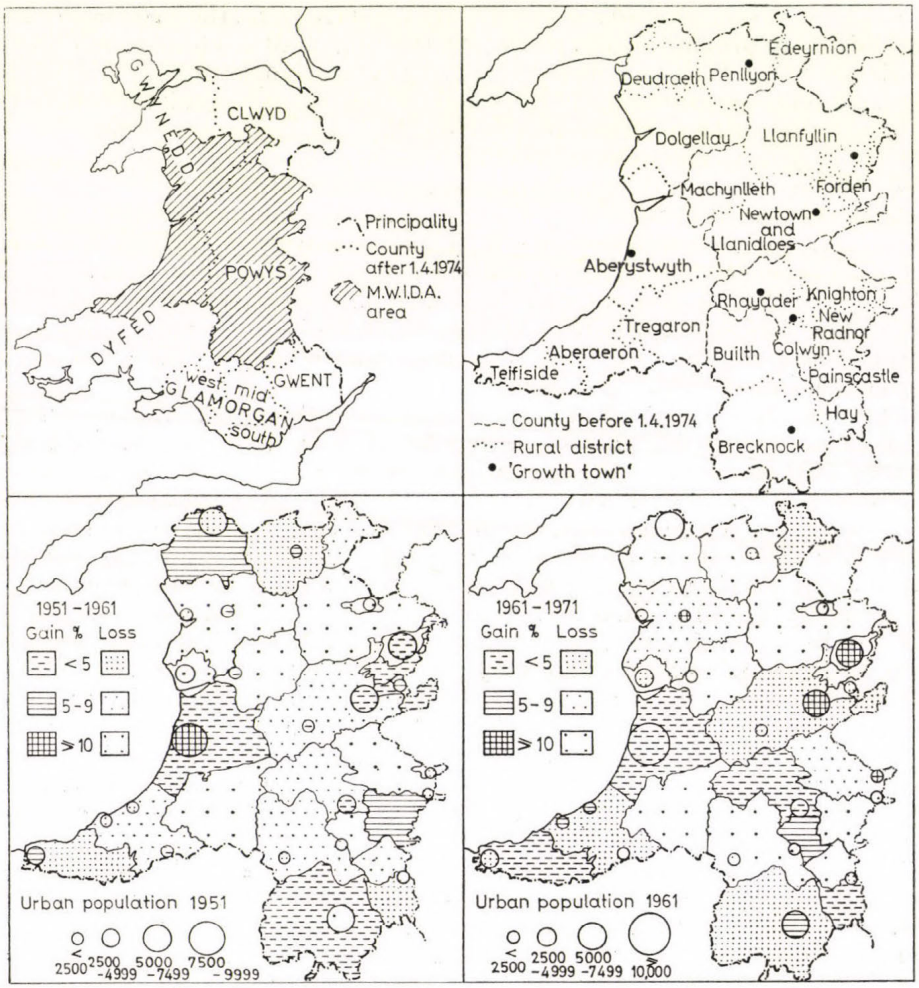


Fig. 1. Mid-Wales: location and population changes, 1951—1971

the peak population had been reached in 1871 (275,000) and it could be argued strongly that population decrease would have set in 30 years before if it had not been delayed by sporadic exploitation of mineral resources, notably those of lead (Cardiganshire/Montgomeryshire), copper, gold, manganese (Merioneth) and the slate quarries of Snowdonia. Consequently an influx of migrant workers to some districts augmented an indigenous population whose high rate of increase had been sustained hitherto only by extensive colonization of marginal land.

When demand for employment in the primary sector and rural crafts slackened, redundant miners and quarrymen joined farmers, forced off the land during the agricultural depression, in a search for alternative livelihoods in expanding conurbations and coalfield industries, leaving behind them a residue of depopulated hamlets and dispersed farmsteads which were themselves often composed of poor quality dwellings and remote from urban centres of economic prosperity or stability.

During the past 100 years, and particularly since 1945, these pressures have intensified to such an extent that the area has seen its 1871 population level reduced by 35%, a trend that, until the past five years, was felt in the small market towns as well as in the countryside. Those who remain are increasingly aware that removal of younger elements and the attraction of retired people creates a rapidly-ageing structure that is less productive economically, as it is demographically. Although unemployment is not very high, except in blackspots such as Blaenau Ffestiniog or Cardigan and Llandyssul, there is considerable under-employment in livestock-orientated agriculture and a continued reduction of jobs for males in the primary sector, transport and construction, amounting to a loss of 6692 between 1961 and 1971. Agriculture is heavily reliant upon government grants and subsidies to hill farms in an area where it has been said "wealth in both economic and cultural senses, is still largely associated with the land" (Welsh Council, 1971). In this respect the Mid-Wales situation stands in stark contrast to most other parts of Britain, for as long ago as 1959—60 it was calculated that 64% of the area's income originated in public funds, a level almost three times higher than in most of rural England and one-sixth higher than the most comparable English county, Norfolk. Even so personal incomes fall far below their counterparts in localities which are usually regarded as similar. In 1970—71, for example, the average gross male earnings in Mid-Wales were £1280, compared with £1341 in the seven Scottish crofting counties, and £1548 in Great Britain (Welsh Council, 1973). A prime contributory factor here is that farms are too small to be economically viable. The Report of the Welsh Agricultural Land Sub-Commission (1955) maintained that 57% of holdings in the area belonged to this category and a further 31% were marginal. Moreover, 70% were without a piped water supply and 85% of the units studied lacked electricity at that date (Welsh Agricultural Land Sub-Commission, 1955). In the absence of favourable employment opportunities, above all without a substantial manufacturing sector in the regional economy, it was inevitable that school-leavers and other qualified young people would continue to be drawn away, accentuating the inherent weakness of the area, despite its strong social cohesion. Finally, just as it has been acknowledged that "the problems facing Rural Wales cannot be solved

solely in economic terms" (Welsh Council, 1971, p. 1), so it must be understood that the problems themselves are not exclusively economic ones. Vigorous residual elements of a formerly more widespread non-material Welsh culture are to be found in this area, and in his Presidential Address to the Institute of British Geographers 15 years ago Professor E.G. Bowen (Bowen, 1959) suggested that a major theme in the interpretation of the geography of Wales should be the changing distribution of the Welsh-speaking population. Fears of the continued erosion of this culture base, substantiated by 1971 Census data, frequently impinge on discussions concerning other policies for the Principality.

PROPOSALS AND POLICIES, 1959—1973

The tenor of Bowen's analysis in 1959 was fairly characteristic of thinking at that time with regard to Mid-Wales' problems, solutions of which were envisaged in modified continuation of existing land use forms — widespread afforestation of suitable slopes, extension of water catchments to serve increasing demand outside the region, and the introduction and encouragement of livestock ranching on a scale hitherto unknown. The strength of such proposals lay in their maximisation of local environmental resources while preserving the harmony of the traditional rural economy. Socially, they did not necessarily involve potential upheaval and conflict by advocating an abrupt change of economic direction. Set against these merits, the implications of the plans on future population trends were largely overlooked and there were as yet few shadows cast by the impact of re-shaped communications networks, the role of tourism and amenity development, the integrated operation of the various elements, and least of all the possibilities of creating industrial-service nuclei.

Within five years approaches had changed dramatically and the period following the Beacham Report was characterized by a more 'urban' outlook insofar as both it and the advisory body, the Welsh Council, laid greater emphasis on re-shaping the outmoded settlement pattern and attracting light manufacturing to selected centres. This policy, accepted by successive governments since 1964, has been implemented in part by creating in 1966 a Development Area, within which incentives are available for firms wishing to establish new premises or expand old ones, and by designating 7 'growth towns', including, appropriately, Newtown (Department of Trade and Industry, 1973). Prior to these developments, the 5 County Councils had themselves been active in providing industrial sites and promoting the area's new image through the Mid-Wales Industrial Development Association (MWIDA). Publicity circulated primarily to firms in the West Midlands had succeeded in attracting about 100 units between 1959 and 1973, thus providing almost 4000 new jobs, many of them in engineering and textiles, the latter being in a sense the heir to woollen craft industries formerly found in Merioneth, Montgomeryshire and the lower Teifi valley in Cardiganshire. Ironically, some of the sites illustrate facets of the area's decay — the first was a clothing factory in a derelict school at Machynlleth, others became available with the closure of uneconomic railway lines and stations at Bala, Carrog, Glyndyfrdwy and Llandrillo (N.E.

Merioneth). Significant progress followed the construction of 'advance factories', operating the principle of 'build 2, lease 1, build another one', so that companies could plan initially on the basis of existing premises, carefully located for ease of access and fully serviced, preferably grouped in small estates like that at Newtown (Garbett—Edwards, 1972).

Increased manufacturing capacity, which still only accounts for 16·5% of the total employment, has not been an unqualified success, despite the optimistic forecasts of MWIDA, in whose Annual Reports can be detected both disappointment and apprehension at the Government's failure to transform its declared policy into hard reality. Newly created jobs in manufacturing have been exceeded by jobs lost in agriculture, forestry, quarrying, transport and construction to the extent of 2500 in the 1961—1971 period, resulting in a total intercensal population loss of 3942, mostly by migration. While male employment vacancies decline, 45% of new jobs are occupied by females, thus tending to reverse the traditional role of women in rural localities at precisely the same time that age-based status structures and relationships are upset by technological advances in farming (Williams, 1972).

Whereas Beacham hoped that "private manufacturing industry, because of its tremendous scope and variety, might make the biggest contribution" (Beacham, 1964, p. 107), in fact private finance initiated only 22 projects during the past 17 years (only 1 since 1971), but the Development Corporation alone has built 15 factories since 1969 in Newtown's Dyffryn Estate. In 1961 two factories at Newtown and Welshpool provided the foundation of 25%

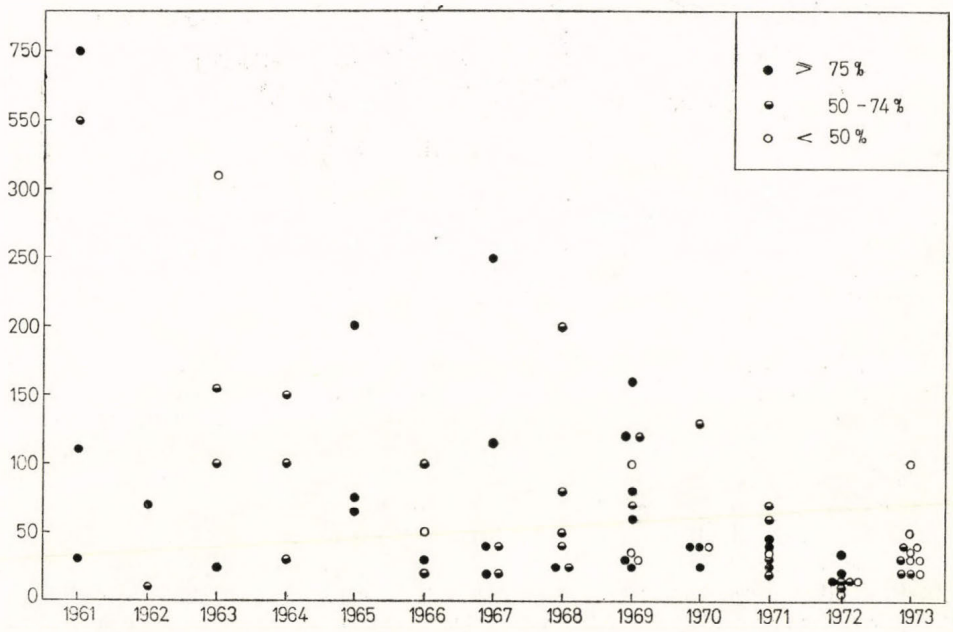


Fig. 2a. Estimated ultimate employment in new manufacturing enterprises, with capacity filled in 1973

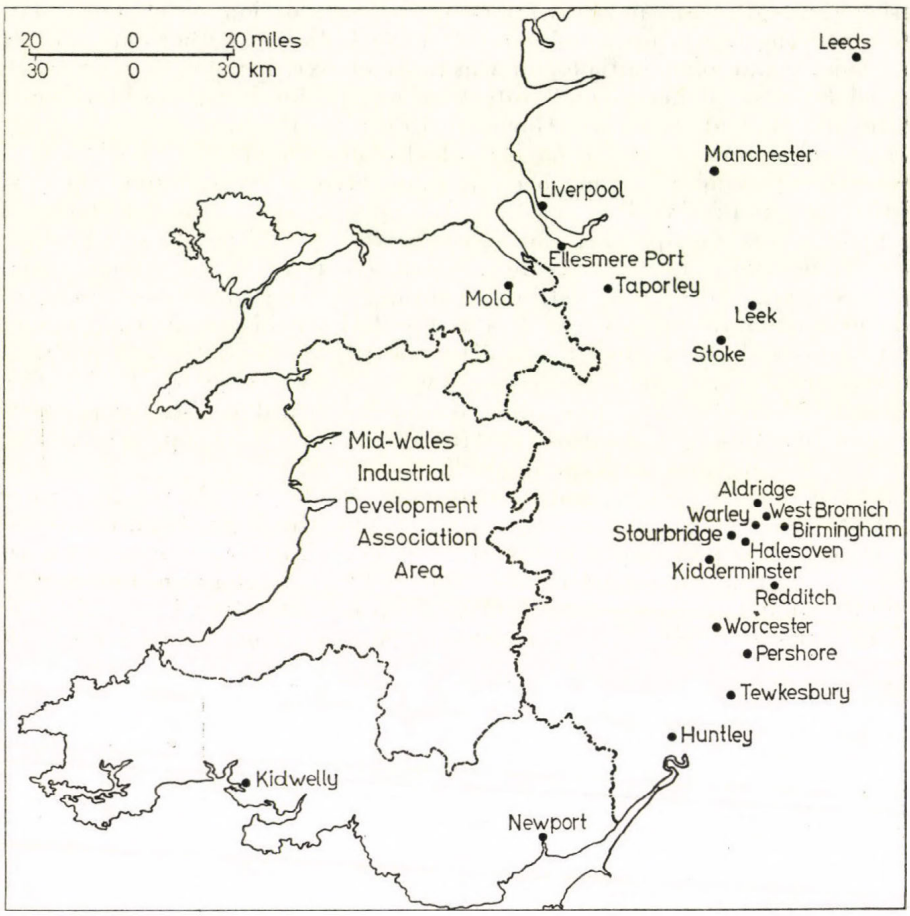


Fig. 2b. Location of parent companies of new manufacturing units in Mid-Wales. In addition to those shown, further single firms were based in Maidenhead (Berks), Leeds and London

of all jobs created by MWIDA, no subsequent year has produced even half that figure and even the average *ultimate* manpower estimates of firms set up in recent years has fallen sharply *(Figs 2a, 2b)*. Of 84 operating units in September 1973, 38 had no more than 25 employees, 52 no more than 50 and only 7 more than 100. In view of the economic and psychological damage caused by the closure of a large enterprise, it may be for the best that the scattered, numerically small labour force — there are only 2500 school-leavers in the whole area each year, and half of those are absorbed by agriculture or further education — has generally attracted only small firms. Nevertheless, as peripheral subsidiaries or branches, they remain extremely vulnerable and no less than 7 closed in 1972, making 150 people redundant in towns where no new employment arose. Finally, the distribution of factories, although

broadly dispersed, carries portentous implications, since of the 10 largest employers all but one occur east of the main watershed and there is an inevitably greater emphasis on the 7 growth towns. Reflecting this situation, contrasting patterns of population change in the decades before and after 1961 show a shift of urban increase from the coast towards the Severn Valley, accompanied by continued rapid rural depopulation (see Fig. 1).

Considering briefly the non-industrial potential of Mid-Wales, it must be acknowledged that afforestation offers no remedy for the problems. Despite increasing costs of imported timber, supplies from as yet immature plantations yield only 200,000 tons annually, insufficient to support a pulp-paper mill, although this should double by 1980. Like former mineral resources, processing is carried out elsewhere, in this case at Ellesmere Port, Sudbrook and Bristol. Competition for land from sheep farmers, private owners and water authorities has reduced the Forestry Commission's annual acquisitions to 5,500 acres and the total forestry area represents only 10% of rural Wales. When only one man is required for every 120 acres, the present labour force of 2000 is unlikely to increase dramatically.

Experiments in forestry–farming integration exist in Snowdonia, perpetuating the small-holding system which the 1967 Agriculture Act wished to eliminate. Incentives to amalgamation may reduce the number of both farmers and isolated homesteads, but there is no guarantee that they will release land for afforestation or result in consolidation of holdings. Moreover, against a background of high levels of owner-occupancy and strong attachment to inherited property, applications for amalgamation or out-going grants have been few, involving only 1% of all holdings during the first two years of the scheme (Jones, 1972).

Intensive seasonal or periodic use of the Cardigan Bay coast and the Snowdonia and Brecon Beacons National Parks *(Fig. 3)* created in the Wales Tourist Board and elsewhere a belief that substantial progress could be achieved in exploiting recreation and amenity potential. Assumptions concerning universal car ownership, increased leisure time and affluence may have been unjustified, as were responses to the types of holiday available and the willingness of residents to participate in farm tourism. WTB statistics for 1972 demonstrate that 82% of visitors to Wales did travel by car, in part a reflection of poor transport services, and that nearly half came from the West Midlands and the North-West, regions having advantages of proximity and other links with Mid-Wales. Two-thirds were accommodated in caravans (85% coastal) or with friends and relatives, and came in during the June–September period of maximum agricultural activity. Further, only 1% stayed in private houses as paying guests and only 15% spent holidays in Mid-Wales (Wales Tourist Board, 1972). Hotel modernization grants under the Development of Tourism Act (1969) produced a similarly low response in this area and most applications came from Cardiganshire and Merioneth, whereas surveys of the interior uplands indicate how poor roads, unsuitable housing, inadequate amenities, the structure of farming and the composition of population interact to reduce the potential offered by supplementary incomes from tourism there (Denbighshire Planning Office, 1973).

Government rejection of the proposed Cambrian Mountains National Park

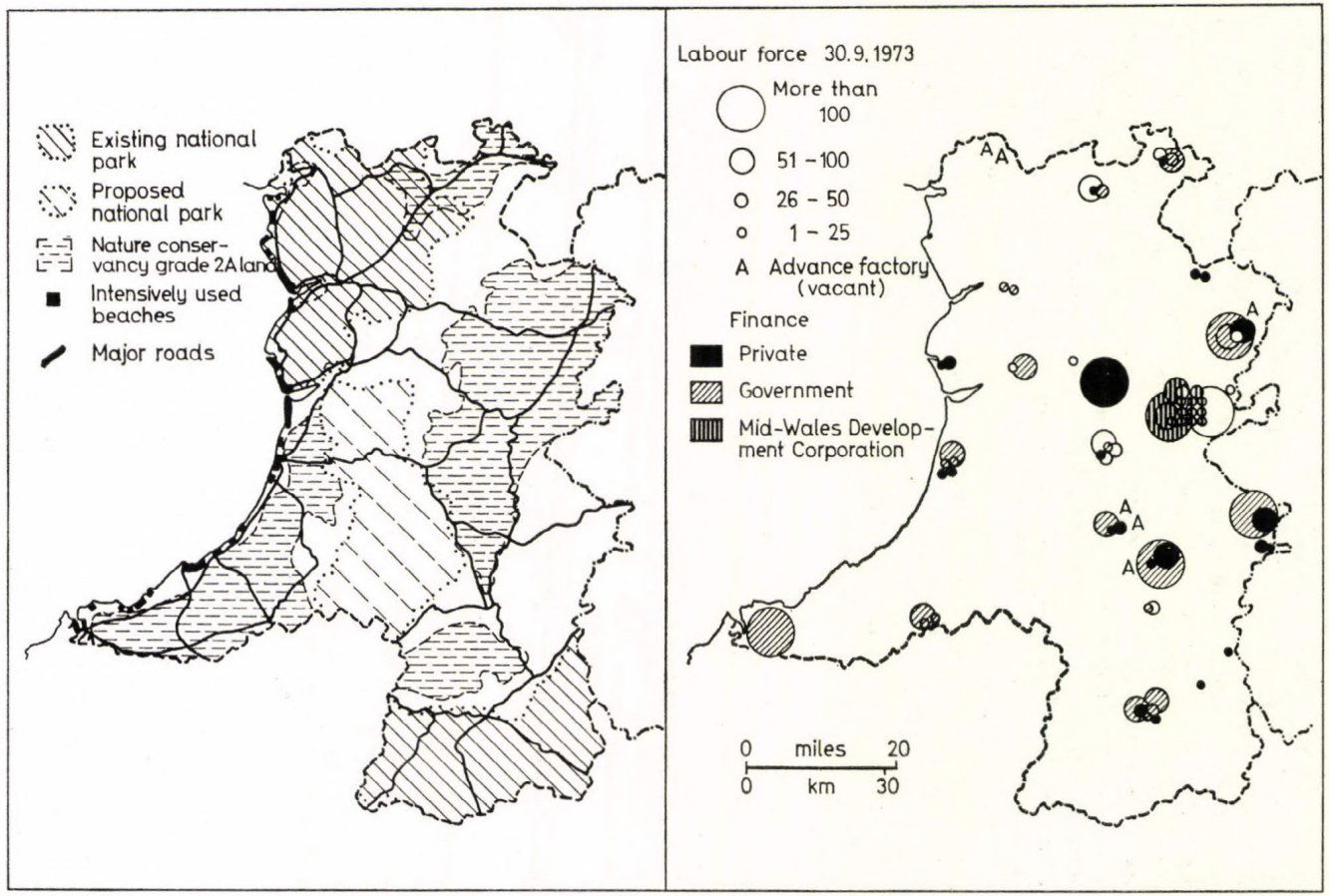


Fig. 3. Selected planning constraints (left) and distribution of industrial units established since 1959 (right)

and a proposed Rural Development Board (compare the Scottish Highlands and Islands in 1965, North Pennines in 1969) places a premium on the success of MWIDA's industrialization programme, involved as it is in the controversy over the eventual wisdom of current policies with regard to labour mobility and industrial relocation (Salt, 1969, 1973). The prerequisite of increased daily commuting to jobs in growth poles is not impossible, given recognition of the *social* need for grant aiding unprofitable road and rail passenger services (Transport Act, 1968). However, a million pounds annual subsidy for this purpose has not broken the reliance on the private car or extended the average distance of commuting much over 5 miles (Mounfield and Watts, 1968). Cultural implications for individuals and communities of expanded labour catchments have been stressed: higher living standards and reduced depopulation conflict with Anglicization, loss of identity and other facets of acculturation (Lewis, 1967, Davies, 1968). Ultimately, there appears to be no substitute for the fully integrated approach of a regional plan, and even that could be futile if it were conceived outside the framework of long-term development in the British Isles.

REFERENCES

Bowen, E. G. (1959): Le pays des Galles. *Trans. I. B. G.*, 26, pp. 1—23.

Denbighshire Planning Office: *Farms and tourism in Upland Denbighshire*, 1973.

Department of Trade and Industry: *Incentives for industry in the areas for expansion.* HMSO, 1973.

Depopulation in Mid-Wales. HMSO, London, 1964.

Jones, J. M. (1972): Problems and objectives in Rural Development Board Areas. In: Ashton and Long (Eds): *The remoter rural areas of Britain.* Edinburg, pp. 109—129.

Garbett-Edwards, D. P. (1972): The establishment of new industries. In: Ashton and Long (Eds): *The remoter rural areas of Britain.* Edinburgh, pp. 50—73.

Lewis, G. J. (1967): Commuting and the village in Mid-Wales: a study in social geography. *Geography*, 52, pp. 294—304; Davies, M. L.: The rural community in Central Wales: a study in social geography. In Bowen, Carter and Taylor (Eds): *Geography at Aberystwyth.* Cardiff, pp. 205—218.

McCrone, G. (1969): *Regional policy in Britain.* London.

Mid-Wales Industrial Development Association: *Annual Reports.*

Mounfield, P. R. and Watts, H. D. (1968): Mid-Wales: prospects and policies for a problem area. In: Bowen, Carter and Taylor (Eds): *Geography at Aberystwyth.* Cardiff, pp. 167—195.

Report of the Welsh Agricultural Land Sub-Commission. HMSO, 1955.

Salt, J. (1969): Workers to the work. *Area*, 5 (1973), pp. 262—266; idem, Post-war unemployment in Britain: some basic considerations. *Trans. I.B.G.*, 46, pp. 93—103.

Smith, A. (1961): The wealth of nations. 5th ed., reprinted, London.

Wales Tourist Board: *Annual Report for the year ending 31st March 1972.*

Welsh Council: *A strategy for rural Wales.* HMSO, 1971.

Welsh Council: *Mid-Wales: the growth town programme.* HMSO, 1973.

Williams, W. M. (1972): Sociological criteria for assessing policies. In: Ashton and Long (Eds): *The remoter rural areas of Britain.* Edinburgh, pp. 202—214.

PART FIVE

LANDSCAPE CLASSIFICATION AND REGIONAL DEVELOPMENT

RECENT DEVELOPMENTS AND APPLICATIONS OF LAND USE CLASSIFICATION IN BRITAIN

by

E. M. BRIDGES

The last twenty-five years have witnessed a generation of unprecedented pressures on the land resources of Britain through increasing population and urbanization. These pressures have led to a strong element of competition for the use of the land (Best, 1968). Often it is a straightforward clash between agricultural interests and urban development but in some instances, notably the National Parks, other interests such as forestry, water supply and a wide range of leisure activities become important. In such cases, planning decisions are always difficult but when basic information about the land is lacking the problems of the planners are enhanced. Considerations such as these highlight the necessity for an adequate knowledge of present land use, as well as its potential capability for crop production or alternative uses. There is no single answer to this problem, for the land rarely has an ideal use to which it can be solely devoted.

In order to attempt to meet the requests for information about the land there has been a two-fold approach to land classification in Britain. On one hand, there is the approach using the utilization of the land to obtain a classification as exemplified by Stamp (1948); on the other hand, there is work by the national organizations concerned with agriculture, forestry and soil survey, all of whom use soil as the basis for an approach to land classification. In this paper, the contribution of land use surveys will be discussed and this will be followed by an assessment of the classifications proposed by the national organizations. Several developments have taken place since the comprehensive survey entitled 'Land Classification' by G. V. Jacks (1946). The characteristics of 75 schemes of land classification were summarized in that review, some of which have formed the basis for development of more recent work.

LAND UTILIZATION AND LAND CLASSIFICATION

For many years the words 'land use' and 'land classification' have been associated in Britain with the name of Stamp. The contribution of this man to virtually all branches of Geography has been great, but in his survey of land use throughout Britain in the years 1931—1938, he left a geographical contribution to society which has been widely used and interpreted ever since (Stamp, 1948). The land use survey and the land classification which resulted from it have been the basis of many decisions about planning simply because there was no other comparable source of information available. In his report

Stamp makes the point that the survey took place when British farming was at a very low ebb, and before modern technology really made a great impact upon farm practice and management. The work of most farms was adjusted to the physical environment in which they occurred, thus Stamp claimed "there was ample justification for the delineation of detailed land use regions based on the existing land use pattern — itself a reflection of farming type and economy, confirmed by a consideration of the historical development of land use, of drift geology, soils, vegetation and known productivity".

The weakness of Stamp's system was that it was based almost entirely upon the existing land use, a feature which has altered considerably with changes in the economic situation and technical knowledge during the last forty years. Although Stamp recognized that the soil was important in land classification, he did not take the whole soil profile into account. Instead one feature, texture, was singled out as significant. However, soil scientists were criticizing Stamp's scheme of land classification in the early 1940's because land use was subject to management and economic considerations which were unrelated to the land and its physical composition including soils. Land use was not a satisfactory basis for the classification of land itself. It was appreciated at that time that it would be many years before an accurate map could be produced of Britain's soils, so it was agreed that the Stamp approach at least gave a good approximation to the general classification of land for planning purposes. As a result of meetings with officials of the Soil Survey of England and Wales (formed in 1939) three major land categories were introduced which were defined as stated in *Table I*.

TABLE I

LAND CLASSIFICATION CATEGORIES (Stamp, 1948)

Major Category I — Good Quality Land
Highly productive when under good management. Land in this category has the following characteristics: site must not be too elevated, it must be level or gently undulating and have a favourable aspect. The soil must be deep with favourable water conditions and the texture mostly loam but including some peats, silts and clays.

Major Category II — Medium Quality Land
Land of only medium productivity even when under good management. Productivity limited by reason of the unfavourable operation of one or more of the factors of site or soil character.

Major category III — Poor Quality Land
Land of low productivity by the extreme operation of one or more of the factors of site and soil.

Stamp attempted to give greater precision by creating subgroups within these three major categories. He proposed four subgroups in good quality land, two in medium quality land and four in poor quality land, making ten subdivisions in his system. Further differentiation was accomplished by an indication of land suited for arable or grassland respectively. The productivity of the land was based on a purely subjective assessment.

The influence of Stamp and other geographers concerned with the First Land Use Survey is apparent in the county development plans prepared as a result

of the 1947 Town and Country Planning Act. Most of these development plans draw heavily upon the information assembled in the county volumes prepared by the Land Utilization Survey. In Britain, public participation in planning takes place through public enquiries. During the past twenty-five years the information provided by the First Land Use Survey has been invaluable in the preparation of cases both for and against development proposals.

Thirty years after Stamp's pioneer survey, a second Land Use Survey has been organized (Coleman, 1961; Coleman and Maggs, 1962). Although the basic categories are similar to those of the original survey, this second survey is published on the 1 : 25,000 sheets of the Ordnance Survey and advantage has been taken of the larger scale to give a greater wealth of detail. In all, 64 different categories of land use are recorded covering all types from semi-natural moorland to the most intensively utilized urban areas. Whilst the rural land use in this survey has been covered admirably, problems exist in the urban areas where only four categories are distinguished, and in the seminatural 'wildscape' areas where emphasis has been placed on the existing vegetation cover as an indication of the potential use of such areas (Coleman, 1970). This is clearly a gross over-simplification of urban land use, but one which is difficult to avoid owing to the complexity of the urban fabric and the constraints of the map scale. No attempts have been made to develop the information gathered in this second land use survey into a form of land classification.

SOILS AND LAND CLASSIFICATION

Officials of the Ministry of Agriculture have long appreciated the need for an improved system of land classification in Britain and have produced a document containing reports on the progress of their discussions (*Ministry of Agriculture*, 1962). Following their deliberations a study group emerged to produce "an improved system of land classification which was to be consistent, readily understandable by persons not necessarily expert in agricultural matters (such as planners) and which could be used in local, regional and national-surveys" (*Ministry of Agriculture*, 1966). Since that time, maps have been produced at a scale of 1 : 63,360 for many parts of Britain using the scheme of classification proposed. This consisted of a physical classification of land into one of five grades according to the restraints imposed on its use by climate, soil and site. This grading does not depend upon available buildings, equipment or standard of management but a second stage of this survey is proposed which will give land an economic classification based on standard net output. This is the "average agricultural output per acre directly attributable to the land, assuming standard management and fertilizer practice". Once these values are known the physical grades can be re-interpreted to give the combined classification. The brief description of the grades in the physical classification is given in *Table II*.

This scheme has now achieved wide usage and forms the basis of the grading of agricultural land in the Sub-regional plans discussed later. However, it must be realized that at the One Inch scale uncertainties can arise through the map scale. The boundaries shown are (usually) gradual and not sharp lines,

TABLE II

AGRICULTURAL LAND CLASSIFICATION (*Ministry of Agriculture* 1966)

Grade I Land with very minor or no physical limitations to agricultural use. The soils are deep, well drained loams, sandy loams, silt loams or peat, lying on level sites or gentle slopes and are easily cultivated. They retain good reserves of available water, either because of storage properties of the soil or because of the presence of a water table within reach of roots, and are either well supplied with plant nutrients or highly responsive to fertilizers. No climatic factor restricts their agricultural use to any major extent.

Grade II Land with some minor limitations which exclude it from Grade I. Such limitations are frequently connected with the soil; for example, its texture, depth or drainage, though minor climatic or site restrictions such as exposure or slope may also cause land to be included in this grade.

Grade III Land with moderate limitations due to the soil, relief or climate, or some combination of these factors which restrict the choice of crops, timing of cultivations, or level of yields. Soil defects may be of structure, texture, drainage, depth, stoniness or water-holding capacity. Other defects, such as altitude, slope or rainfall, may also be limiting factors; for example, land over 400 ft. which has more than 40 in. annual rainfall (45 in. in North-West England, Western Wales and the West Country), or land with a high proportion of moderately steep slopes (1 in 8 to 1 in 5) will generally not be graded above III.

Grade IV Land with severe limitations due to adverse soil, relief or climate, or a combination of these. Adverse soil characteristics include unsuitable texture, and structure, wetness, shallow depth, stoniness or low water-holding capacity. Relief and climatic restrictions may include steep slopes, short growing season, high rainfall or exposure. For example, land over 600 ft, which has over 50 in. annual rainfall or land with a high proportion of steep slopes (between 1 in 5 and 1 in 3) will generally not be graded above IV.

Grade V Land with very severe limitations due to adverse soil, relief or climate, or a combination of these. The main limitations include very steep slopes, excessive rainfall and exposure, poor to very poor drainage, shallow depth of soil, excessive stoniness, low water-holding capacity and severe plant nutrient deficiencies or toxicities. Land over 1,000 ft. which has more than 60 in. annual rainfall or land with a high proportion of very steep slopes (greater than 1 in 3) will generally not be graded above V.

land may be assigned to a particular grade for a number of completely different combinations of reasons and the grades are not of equal range. Grades I and II are purposely kept tightly defined whereas Grades III and IV have a wider range of land types. Crop yields on Grade I land are consistently high and the possibility of a wide range of horticultural and arable crops lends flexibility to the cropping. If Grade II cultivation or harvesting might be hindered, lead to lower yields or be less flexible than expected for Grade I land. Although a wide range of arable crops may be grown, some restriction may occur with roots and horticultural crops. Cropping becomes restricted in Grade III so that only the less demanding horticultural crops can be grown. Reasonable yields of grass and cereals under average management are obtained but some of the best quality grassland may be placed in this grade where physical conditions restrict arable cropping. A high proportion of Grade IV is under grass with only occasional fields of arable for oats, barley or forage crops. In Grade V land is generally under grass or rough grazing. Two non-agricultural areas are

shown on the maps: built-up areas and woodland which is combined with large areas of public open space.

As land is at the mercy of economic forces and human caprice, it has been seen by soil scientists that a more fundamental approach to land classification than through land utilization is necessary. This has been embodied in the land capability approach which throws greater emphasis upon the soil. Originally developed in the United States, this concept has been used or adapted for use in many other countries (Klingebiel and Montgomery, 1961). It is based on the physical factors of the environment and includes information derived from published soil surveys, the occurrence of which can be seen in the current report of the Soil Survey of England and Wales. In Britain, this scheme was tested in the Church Stretton area and a land capability map accompanies the soil map of that district (Burnham and Mackney, 1966). It differs slightly from the original American system in that steep slopes represent more of a limitation in Britain than erosion; accordingly the authors use a gradient factor 'g' as well as the other factors of 'w'-wetness, 'r'-rooting zone defects, and 'c'-climatic limitations.

The underlying assumption in this approach to land classification is that within certain classes, land use is limited by the factors mentioned and these restraints have been used to give a general land classification to soil mapping units (Findlay, 1965; Bridges, 1966). Limiting factors which have been used in these papers include altitude, steep slopes, shallow soils on soft or hard rocks, stoniness, high watertable, surface wetness and cultivation difficulty. In the allocation of the various soil series to their appropriate classes and subclasses, local experience of soil surveyor, farmer and agricultural advisor have all been taken into account to produce a list of soils with similar land use capability. Following these experiments, Bibby and Mackney (1969) produced a booklet entitled "Land Use Capability Classification" which has been extensively used by agricultural advisors and soil surveyors in Britain. This scheme is based on the American experience and has modifications which result from work in Britain. In the first place the number of classes is reduced from eight to seven, and an additional subclass based on gradient and soil pattern limitations has been introduced.

Before the system is described, it is necessary to state the following assumptions, which have been made. It is a classification which is primarily for agricultural purposes, and the land capability is assessed from its use under moderately high level of management. It does not attempt to state the suitability of the soil and land for specific crops, nor is the distance to markets, availability of roads and farm structure taken into account even though these will affect decisions about the land use. Where limitations can be removed at reasonable cost, the land is graded upon the severity of the remaining limitations. Minor improvement schemes liable to deteriorate with time will not affect the classification but major schemes, such as lowering the regional watertable, will necessitate a change in classification. Finally, it must be appreciated that within classes and subclasses land and the soils may be grouped together for very different reasons and necessitate individual management, fertilizer and cropping programmes.

The classes of the soil survey system of land classification are based on

increasing restrictions placed upon land by the physical limitations inherent in it. Classes 1 to 4 includes the land which is suitable for arable cultivation, 5 and 6 are not suitable generally for arable cultivation, whilst class 7 is not suited to arable crops, grazing or forestry. Within each class limiting factors are identified and given an appropriate symbol; five are used — wetness *(w)*, soil *(s)*, gradient *(g)*, climate *(c)* and erosion *(e)*. These subclasses embrace landscape units which require different management, and improvement techniques *(Table III)*.

A relatively small number of people are interested in purely pedological aspects of the landscape but there are many who, at some time or other, directly or indirectly, take advantage of knowledge about soils. To cater for this latent demand the soil survey has tried to present information in its publications in a land capability classification format. Examples of this include the new publication of Soil Records, based on 1 : 25,000 sheets of the Ordnance Survey and other Special Surveys (Corbett and Tatler, 1970; Rudeforth and Bradley, 1972).

TABLE III

LAND USE CAPABILITY CLASSES (Bibby and Mackney, 1969)

CLASS 1	Land with very minor or no physical limitations to use.
CLASS 2	Land with minor limitations that reduce the choice of crops and interfere with cultivations.
CLASS 3	Land with moderate limitations that restrict the choice of crops and/or demand careful management.
CLASS 4	Land with moderately severe limitations that restrict the choice of crops and/or require very careful management practices.
CLASS 5	Land with severe limitations that restrict its use to pasture, forestry and recreation.
CLASS 6	Land with very severe limitations that restrict use to rough grazing, forestry and recreation.
CLASS 7	Land with extremely severe limitations that cannot be rectified.

LAND USE CAPABILITY SUBCLASSES

Capability subclasses are divisions within classes based on the kinds of limitations affecting land use.

w	wetness
s	soil limitations
g	gradient and soil pattern limitations
c	climatic limitations
e	liability to erosion

The Forestry Commission of Britain has recently been attempting to systematise their choice of tree species to be planted. Hitherto foresters used a combination of site and existing vegetation as an indication of what might grow satisfactorily; Britain's modern forests have been planted in this manner. For several years now the Forestry Commission has appreciated that a form of land classification would be extremely helpful, and efforts have been made to

formulate a satisfactory method of chosing the best tree species for planting at any particular site. Although an attempt was made to classify in a similar manner to the agricultural land classification, this was not acceptable to foresters because of difficulties in assessing the relative importance of site factors. Tolman (1972) has indicated that a combination of soil type in relation to other factors such as altitude, rainfall, aspect, slope, exposure, accumulated temperature, accumulated frost, potential water deficit and pollution is necessary before the choice can be made. However, the basis of their system is the soil, which, for the range of site types occurring in North- and Mid-Wales, they have found convenient to group into 14 categories *(Table IV)* (Pyatt, Harrison and Ford, 1969). Currently surveys are in progress and at the present time about 25 per cent of state forest land has been surveyed by this system.

TABLE IV

SITE TYPES OF FORESTS IN NORTH- AND MID-WALES (Pyatt *et al.*, 1969)

Site type			
1.	Alluvium, poorly drained	7.	Surface-water gley
2.	Alluvium, freely drained	8.	Peaty gley
3.	Lowland brown earth	8*a*.	Peaty gley, shallow
3*a*.	Steep brown earth	9.	Flushed basin peat
4.	Upland brown earth	10.	Raised bog (non-flushed sphagnum bog)
4*a*.	Upland brown earth, shallow	11.	Hill peat
5.	Intergrade	12.	Shallow peat over rock
5*a*.	Intergrade shallow	13.	Bare rock and coarse scree
6.	Ironpan soil	14.	Lead mining spoil
6*a*.	Ironpan soil, shallow		

Concurrently, research is being undertaken into the nutrition of forest crops in relation to soil and foliar analysis, the physical and mechanical properties of soils; drainage, cultivation and stability of tree crops; growth rate of species on identical sites and the identification of the importance of site factors in correlation with growth. Performance of crops on specific sites is difficult to obtain as growth rates vary with age and in many cases trees have not yet grown to full maturity. Also, as a tree crop grows it changes the micro-climate and moisture relationships of the site and influences the vegetation already growing there, so physical conditions at maturity are not the same as at the beginning.

Land use capability has been shown to be a useful aid to agriculture and forestry, but it is possible to apply its findings to a wider sector of the human environment as has been demonstrated in the United States (Bartelli *et al.*, 1966). In this context, the most direct application for information about land use and its capability is by officials concerned with planning. At a national and regional level planning is essentially an economic exercise within which the broad picture of future development is examined. However, at sub-regional level and in local detailed planning, the factors of the physical environment

become increasingly important. As an example, the "North Gloucestershire Sub-Regional Study" (Collins, Downs and Pullan, 1970), draws attention to a number of physical limitations to future development. A risk of flooding on the alluvial land of the river Severn has led to the margin of 2·5 m above the level of previously known floods being taken as a limit for development, and a cautionary note is made about local conditions elsewhere. The second major restraint was sloping land. Here a gradient of 1 : 7 1/2 was taken as including land inappropriate for development. Thirdly, the natural resources of the sub-region are taken into account when assessing areas of future development. Soils on land placed in the Grades I and II of the Ministry of Agriculture's scheme (see Table II) are preferably retained in agricultural or horticultural use and a policy of minimizing the loss of good agricultural land is clearly maintained. Other natural resources include the gravels of the river terraces of the Severn and areas of high landscape value. In this example a flexible approach was taken using five different strategies one of which emerged clearly as least affected by the physical restraints.

In other studies the physical restraints have been less obvious and planners appear to have given them lower priority in their considerations. In the "Coventry, Solihull, Warwickshire Sub-Regional Study", the class of agricultural land is taken together with an index of landscape value based on land form, land use and land features, and these are used together with a conservation priority map to draw up management strategy plans in the light of human pressures on the area. In all cases the planners need to know the present situation from which they can extrapolate their predictions and recommendations for further growth. Land utilization, therefore, appears in all planning studies at the sub-regional and local level. In so far as the ten planning regions of the United Kingdom, the attitude to land use and related studies can be demonstrated by the statement that "Land is not a homogeneous commodity, and the best farming and most expensive equipment can only get the best results if they are applied to the best land". At the regional level, it is clearly stated that the detailed control of land use is the task of the local planning authorities. Planners are advised to avoid good agricultural land whenever possible in that "agriculture will only be fully effective, and will give the fullest return on the capital and labour that is invested in it, in so far as urban development is directed towards the poorer land" (*East Midlands Planning Council*, 1966).

A recent special survey of soils in the Castleford district of Yorkshire has been undertaken in conjunction with the planning authorities. Normal soil survey work has been extended to include additional information on the physical properties of soils and a land capability map constructed (Hartnup and Jarvis, 1973).

Given adequate information about soils and landscape, soundly based proposals could be advanced for the most satisfactory re-development and utilization of the land. Examples given include the use of poorly drained soils on river terraces as suitable for wildlife and nature reserves with footpaths on the better drained areas and possibly further excavation of poorly drained land to provide filling, or a covering medium in the restoration of colliery waste. Other thin superficial deposits overlying coal measures shales could be best

developed for housing or light industrial usage, as heavy industrial building would mean greatly increased costs in foundation work if differential subsidence were to be avoided. The case for retaining existing woodland in preference to other uses could be argued from the soil and other physical attributes of the site as removal of the trees would make natural drainage conditions even worse than those which exist at present.

There is a wider implication of soil surveys, land use surveys and land capability surveys, and that is to assess the productive capacity of the soil and land as a natural resource. This knowledge is rapidly assuming a position of major importance in world food supply as population pressures increase in both developed and undeveloped sections of the world. This has been recognized by F.A.O. where research has been under way considering the most effective means of developing international standards of land classification. It has been suggested that the present approach stresses the negative features, the limitations, whereas it ought to stress the good properties rather than the bad ones. Riquier, Bramao and Cornet (1970) have proposed a classification in terms of 'productivity' and 'potentiality'. They have developed an idea originally proposed by Storie (1933) that the productivity of the soil was related to the product of an assessment of the profile characters. Storie's original four factors have been expanded to eight, including moisture, drainage, depth, structure or texture, base saturation or salt concentration, organic matter content, nature of clay and mineral reserves. Each factor is rated on a scale 0—100 and the percentages multiplied together to give an index of productivity. The potentiality index results from a similar exercise but with the factors adjusted for optimum management. The authors regard this method as one which can be used to compile a soil resource map for planning purposes. Steele (1967) quotes an appraisal of Nigerian soils using a similar approach. Although the application of surveys such as these in the under-developed countries is more critical than in the developed countries its use is still valid in a European setting. In all cases the difficulty is to bring together the physical attributes of soil, land form, climate, the effect of management and show these are linked to the productive capacity of the land. For many years officials of the Ministry of Agriculture in Britain have been carrying out experiments in the use of inorganic fertilizers for different crops and soils but lack of information on soil dsitribution means that it has not been possible to relate this work closely to soils whose characteristics are known and whose distribution has been mapped. In an attempt to gain some information on productivity a number of soil evaluation studies have been carried out in Britain on soils known to be widespread. These 'benchmark' soil evaluations can then be extrapolated to similar soils, as it is impracticable to conduct long-term experiments on all soil mapping units (Wilkinson, 1968). Some of the methods used to collect data on productivity of British soils have been reviewed by Burnham and Dermott (1964) either using yield data from a number of widespread soils under strictly controlled management or taking advantage of the natural variability of soils and experimenting on two different soils within the same field.

CONCLUSIONS

It was stated at the beginning of this paper that it often appears that the resolution of planning problems is to solve the clash between agricultural interests and alternative uses of the land. This is particularly obvious in the areas peripheral to urban development. In many cases "green belt" policies have been maintained; although arresting urban development, the green belts rarely provide opportunities for recreation which townspeople feel they should. Equally, as far as the rural community is concerned, the land abutting the urban area is difficult to farm with problems of trespass and destructive vandalism which affects crops, livestock machinery and buildings. The development of countryside parks in districts not far removed from urban areas could help overcome the problem of inaccessability for the urban dweller. The containment of an increasing population within a limited land area with an environment which gives an acceptable quality of life means that planners must ensure the conservation of the means of food production as well as the amenities of the landscape.

Recent legislation, the Town and Country Planning Act of 1968, has led to the generation of a new series of 'structure plans' within which the local planning authorities state their overall policies. At a secondary level, 'local plans' will serve to control the detailed implementation of future developments. Undoubtedly these plans will contain the flexible approach developed in recent sub-regional plans, and the role of the physical attributes of the landscape will figure more prominently than previously.

Vink (1963) has shown that the initial soil survey is but the first step in a number of interpretations of the environment. These include soil distribution, soil quality, soil suitability, crop response as well as present and future soil and land use. These examples from Britain indicate that increasing use is being made of information about the physical limitations of the environment. However, it is essential first to process the information into a form in which it can be used by administrators and planners. The use of land use and land capability classification in Britain is one of the main ways in which the expertise of geographers and other environmental scientists is communicated to the community.

REFERENCES

Bartelli, L. J., Klingebiel, A. A., Baird, J. V. and Heddleston, M. R. (1966): *Soil surveys and land use planning.* Soil Science Society of America and American Society of Agronomy, Madison.

Best, R. H. (1968): Competition for land between rural and urban uses. In: Land use and resources: studies in applied geography. *Inst. Br. Geogr. Spec. Publ.*, 1, 89—100.

Bibby, J. S. and Mackney, D. (1969): *Land use capability classification. Tech. Monogr.*, 1, *Soil Surv.*, Gt. Br., Harpenden.

Bridges, E. M. (1966): Land use limitations in the area north of Derby. *East Midland Geogr.*, 4, 31—38.

Brinkman, R. and Smyth, A. J. (1973): Land evaluation for rural purposes. *Int. Inst. Land Rec. and Improvement Publ.*, No. 17, Wageningen.

Burnham, C. P. and Mackney, D. (1966): The soils of the Church Stretton District of Shropshire. *Mem. Soil Surv.*, Gt. Br., Harpenden.

Coleman, A. (1961): The second land use survey: progress and prospect. *Geogr. J.*, 127, 168—186.
Coleman, A. (1970): The conservation of wildscape: a quest for facts. *Geogr. J.*, 136, 199—205.
Coleman, A. and Maggs, K. R. A. (1962): *Land use Survey Handbook.* Isle of Thanet Geographical Association.
Collins, N. R., Downs, R. A. and Pullan, R. H. (1970): *North Gloucestershire sub-regional study.* Gloucester County Council.
Corbett, W. M. and Tatler, W. (1970): Soils in Norfolk: Sheet TM 49 *Soil Surv. Record No. 1.*, Harpenden.
East Midlands Planning Council (1966): The East Midlands Study. *HMSO*, London.
Findlay, D. (1965): *The soils of the Mendip District of Somerset.* Mem. Soil Surv. Gt. Br., Harpenden.
Hartnup, R. and Jarvis, R. A. (1973): Soils of the Castleford Area of Yorkshire. *Special Survey*, No. 8, Soil Surv. England and Wales, Harpenden.
Jacks, G. V. (1946): Land classification. *Tech. Comm.*, No. 46, Imperial Bureau of Soil Science, Harpenden.
Klingebiel, A. A. and Montgomery, P. H. (1961): Land capability classification. *Agriculture Handbook 210*, Soil Conservation Service, USDA.
Ministry of Agriculture (1962): Classification of agricultural land in Britain. *Rept. No. 8*, Agricultural Land Service, London.
Ministry of Agriculture (1966): Agricultural land classification. *Report No. 11*, Agricultural Land Service, London.
Pyatt, G. D., Harrison, D. and Ford, A. S. (1969): Guide to site types in forests of North and Mid-Wales. *Forestry Commission Record, No. 69, HMSO*, London.
Riquier, J., Bramao, D. H. and Cornet, J. P. (1970): A new system of soil appraisal in terms of actual and potential productivity. *F. A. O. 1970, AGL TESR/70/6.*
Rudeforth, C. C. and Bradley, R. I. (1972): Soils, land classification and land use of West and Central Pembrokeshire. *Special Survey*, No. 6, Soil Surv. England and Wales, Harpenden.
Stamp, D. L. (1948): *The land of Britain: its use and misuse.* Longmans Green, London.
Steele, J. G. (1967): Soil Survey interpretation and its use. *Soils Bull.*, No. 8, *F. A. O.*, Rome.
Storie, R. E. (1933): An index for rating the agricultural value of soils. Bull. *566, Calif. Agr. Expt. Sta.*, Berkeley (Revised 1937).
Tolman, R. D. L. (1972): Soil Survey and site appreciation in forests in the South Wales coalfield. *Welsh Soils Disc. Group Rept.*, No. 13, 129—160.
Vink, A. P. A. (1963): Planning of Soil Surveys in land development. *Int. Inst. Land Rec. and Improvement Publ.*, No. 10, Wageningen. Wilkinson, B. (1968): Land capability: has it a place in agriculture. *Agriculture*, 75, 343—347.

LANDSCAPE TYPES OF HUNGARY AND REGIONAL DEVELOPMENT

by

M. PÉCSI

The geographical environment is not identical with the natural environment. The latter includes the land areas unaffected by man, and all other aspects of the biosphere. With the rapid progress of society and technology, however, the geographical environment is gradually expanding at the expense of the natural environment. Consequently, the geographical environment is the specific section of nature affected by both natural and social processes. It accommodates the cultural elements of social labour and carries the impact of socio-economic progress. The geographical environment thus undergoes continuous development through the interaction of physical and social processes. The natural environment taken in this sense is considered identical with the geographical notion of landscape in some of the literature.

Recently, in the investigation and evaluation of the geographical environment, the landscape ecological approach has come to the fore, and there is now a real social and economic demand for investigating regionally complex geographical landscapes as topological units (landscape-facies, ecotopes, etc.). Nearly identical landscape types are formed by closely related landscape-ecological systems, the so-called geo-systems, although these systems will differ in extent, energy and raw material resources. The intensive surveying and characterization of various landscape types provide basic scientific information for regional planning, landscape protection and reconstruction.

In Hungary hardly any landscape type has been preserved in its original natural state. In the geographical environment, which has been variously modified by socio-economic activities, even the physical factors have been so influenced. As a result of anthropogenic impact, some landscape types have deteriorated or show a harmful declining trend. Consequently, a landscape type which was originally homogeneous can become artifically differentiated. At the same time, on account of similarities between economic activities, ecologically different topological units may occasionally merge into identical ecological types.

To further the theoretical and practical development of landscape typologies in Hungary, the small-scale landscape typological distribution and mapping of the country have been completed (Pécsi, Somogyi and Jakucs, 1972). To explain the legend of the map, let us briefly summarize our conception and working methods. The ecological facies, occurring in Hungary, have been ranked into 36 typological groups which in turn are ranked into 12 landscape types, and finally into 3 major landscape types (see *Map*, attached).

LANDSCAPE TYPES, LANDSCAPE ECOLOGICAL GROUPS AND TOPOLOGICAL UNITS IN HUNGARY

Hungary lies in the so-called Carpathian Basin of the Alpine-Carpathian-Dinaric mountain system of Central Europe. Due to her geographical position her climate is moderately continental. Her weather is controlled by the alternating influence of Atlantic, Mediterranean, East European Continental and Arctic air masses, in such a way that the individual types usually predominate for a short time only. In rare instances, usually at intervals of 4- to 5-years, humid Atlantic or dry continental air masses gain predominance for weeks or months on end.

Superimposed upon the global and regional climatic characteristics, the country's natural landscape types have been determined by structural-geomorphological factors. Just under two thirds of the country is formed of the alluvial plains and fans of the Danube, the Tisza and their tributaries. They comprise a basin of recent subsidence which has attracted centripetally the river network of the surrounding mountain arc. The Hungarian (or Pannonian) Basin is divided into two parts: the Kisalföld (Little Hungarian Plain) and the Nagyalföld (Great Hungarian Plain). The two plains are separated by the Hungarian Uplands, and their foothills. The Hungarian Uplands are composed of a series of mainly Mesozoic horsts of moderate altitude and of Tertiary volcanic mountains.

On the basis of this, Hungary is characterized by the presence of continental and sub-continental lowland-type landscapes belonging to the forest-steppe zone (1), and by hilly (2) and mountainous (3) landscapes typified by sub-continental and sub-atlantic oak and beech forests.

LOWLAND TYPES

The Hungarian lowlands can be divided into two distinct landscape types: (a) intrazonal floodplains which are mostly flood-controlled and artificially drained, and (b) cultivated zonal forest steppe plains which are flood-free and are made up of loess- or sand-blanketed alluvial fans.

(a) The regulated floodplains comprise almost all of the lowlands. The river valleys contain intrazonal alluvial ecological groups. Riparian willow-poplar associations growing on alluvial soils are still rather widely distributed along the riverbanks and the banks of oxbows and other kinds of meanders. On the "higher levels of the floodplains", however, merely the remnants of the riparian elm-ash-oak associations have been preserved and the swampy (hydrophilous) associations and resulting peaty soils have been reduced in extent as a result of artificial drainage operations and flood-control. The formerly wet, waterlogged meadows, even those of greatest extent, have been drained and with the artificial lowering of the ground-water table must have been converted into arable land. Consequently, the intrazonal meadow soils of the floodplains have locally developed into meadow chernozem soils. In addition to these, on the floodplains of the Great Plain and between groups of sand dunes representatives of ecological landscape

types characterized by primary and secondary alkaline soils or "szik"-soils, such as solonetz, solod and solonchak are widely distributed in a mosaic-like fashion.

(b) The ecological variants of the zonal forest-steppe landscape types in the plains are determined by hydro-geographical and water regime characteristics, which are related to the local geomorphology. Some of the dry alluvial fans are only a few metres higher than the river floodplains and under such conditions the groundwater table lies relatively close to the surface. Hence meadow-chernozem soils have originated, while in other places, meadow solonetz soils have been converted into steppe soils.

Wherever the loess blanket is thick, the groundwater table has remained well below the surface and in these places zonal chernozems can be found. On the loessic chernozem plains, the Acereto-Tatarici-Quaercetum is the climax association, i. e. the classic "puszta" of loessic grassland with scattered oak woods containing the Tartar maple. The former forest-steppe zone is nowadays almost completely characterized by culture-steppe: an agricultural landscape with a rather dense network of settlements, still dotted in many places with isolated farmsteads, the "tanya".

Where the alluvial fans are covered with wind-blown sands and dunes the lowland-type landscapes locally form a mosaic-pattern. Sandy meadows under cultivation alternate with rough wind-blown sands, oak-patterned grasslands (Festuceto-Quercetum roburis), poplar-juniper associations (Junipereto-Pupuletum albae), acacia forests, arable land and orchards. In accordance with the frequent variations of geomorphological and groundwater conditions, the croplands are characterized by rough sands, humic sands, sandy chernozems and brown forest soils.

In the lowlands at the margins of the Great and Little Hungarian Plains special landscape ecological groups can be distinguished which, due to their mountain foreland situation, enjoy a more generous supply of precipitation. There the subtypes are characterized by chernozem–brown forest soils and brown forest soils.

HILL TYPES

The hill landscape types of Hungary include those regions which are 200 to 350 metres above sea level. Such areas are dissected by valleys usually containing loose sediments of Tertiary and Quaternary age, while the slopes are covered for the most part by loess, slope-deposited loess or residual loams. Their natural vegetation is characterized by Turkey oak-oak associations and by mixed deciduous forest under which brown forest soils of Central and East European type have formed.

On the basis of climatic differences, relative relief and the specific water and biogeographic regimes that result the following additional ecological groups of hilly landscape types have been distinguished.

(a) Foothills and independent hilly landscapes, which are covered by Turkey oak-oak forests, are found in the NNE part of the country because of the continental to subcontinental climate predominating there.

(b) As a result of more humid sub-Atlantic and sub-Mediterranean climatic influences predominating in the hilly regions of the W-SW parts of the country mixed deciduous forest, existing in large patches on hills of low elevation, is still typical.

(c) The hills dotting the minor intermontane basins have been distinguished as a separate group because of their special climate, specific water regime and biogeography.

The ecological groupings of the hilly landscapes were classified according to types of forest soil. With increasing humidity the soil types vary from the chernozem–brown forest soils of the east, through Raman's brown forest soils to the pseudogleyic brown forest soils of the west.

Within the individual hilly landscape types — for instance, the subcontinental hilly region with Turkey oak-oak vegetation, chernozem soils and erosional and derasional hills — the degree of erosion and relative relief energy were demonstrated by special colour shading on the map.

Today it is only the hills over 250—300 metres above sea level which are covered with forest. Much of the former forest has been turned into arable land or orchards, and the slopes and basins are the sites of industrial and mining plants.

MOUNTAIN TYPES

The mountain landscape types of Hungary which can be classified orographically as uplands (360—650 m) and highlands (650—1000 m) traverse the country for some 400 km in a SW-NE direction. This upland range, dissected by small basins and valleys, is cut into two parts by the Visegrád Gorge of the Danube. West of the Gorge are the Transdanubian Uplands composed of horsts of carbonate rocks with planation surfaces between 400 and 700 m showing specific morphostructural and lithological characteristics. Juxtaposed or superimposed on these are volcanic hills and groups of lava-capped monadnocks.

However, east of the Gorge, in the Northern Hungarian Upland Range, strongly karstic Mesozoic and Paleozoic block structures as well as the Neogene Intra-Carpathian volcanic groups become predominant.

The low crystalline spurs of the Subalps on the country's western border, and the Mecsek Highlands of Southern Transdanubia which represent an Upper Paleozoic-Mesozoic fault-folded horst, form an upland landscape type of restricted areal extent.

The sub-categories of the upland landscape types have been based upon zonal vegetation types, climatic influences and the edaphic variations of the rocks (volcanic, carbonates, crystalline, etc.). In distinguishing landscape ecological groups, soil types were taken as the basis. In addition, the modifying effects on the landscape of agriculture, industry and mining have been taken into consideration.

Because of the small scale of the map of landscape types (1 : 500,000) we have restricted ourselves to more generalizations in considering the ecological variations due to the different expositions of the slopes.

(a) The Hungarian uplands are covered with oak- and hornbeam-oak woodland. According to their climatic character, they can be referred to three categories:

— the dry subcontinental, Turkey oak-oak types of the Northern Hungarian Upland Range,

— the sub-Mediterranean climatic type, covered with oak forests characteristic of the Uplands of Transdanubia, and

— the more humid uplands with a sub-Atlantic climate, covered with hornbeam-oak forest.

Within these three subcategories two landscape ecological groups can be distinguished: on the one hand, a type characterized by carbonate-based rendzina soils, and on the other, one characterized by various brown forest soils developed on volcanic or crystalline rocks.

(b) The highland landscape type is represented only in the Northern Hungarian Upland Range being confined to minor patchlike areas at altitudes of 650 to 1000 m. This landscape type is characterized by continuous beech forest, a more humid Central European or sub-Atlantic climate, and locally acid although not podzolic brown forest soils (see Map).

INTERPRETATION AND REPRESENTATION OF LANDSCAPE TYPES

The classification of Hungary's landscape types and landscape ecological groups (subcategories) has been based upon the physical background and natural resources. At the same time, the anthropogenic effects have been reflected in the nomenclature of the landscape types, for instance, continental forest plain or predominantly agricultural landscape type. Our aim has been to represent spatially the landscape types, produced by both natural and social factors, that actually exist.

In developing the categories of landscape types and landscape ecological groups the experience gained through many decades of physico-geographical survey work and small-scale natural thematic map production by numerous geo-scientics has been applied. Furthermore, the similar ecological groups derived from various climatic, water regime, and erosional data were compared with each other. Wherever necessary, these data (discharge, climatic, water regime and ground water data) are indicated on the map by numerals of various colours. In this way, an integrated system of recording the geo-elements forming the landscape ecological types has been developed. In the case of individual categories, a hierarchy of type-forming factors has been established. Within the lowland landscape types, in general, primarily soil types and water regime have been considered in the evaluation of the potential of the landscape. In the uplands, however, the substantial content of a landscape type or landscape ecological group has been demonstrated more reliably and clearly by relief and vegetation.

LANDSCAPE TYPOLOGY AND REGIONAL PLANNING

Landscape typology provides a necessary basis not only for the complex regional subdivision of the landscape, but also for the planning of economic development projects and the optimal utilization of the geographical environment. By taking into account the fundamental differences between landscape types, there may be a possibility of increasing economic efficiency.

In recent years the role and importance of regional planning in the economic development of individual countries has increased considerably. The following two reasons are responsible for this: on the one hand, rapid technological progress has caused grave damage to the natural environment, and on the other, the optimal utilization (exploitation) of both natural and economic resources has to be achieved in order to improve living standards. The designation and characterization of landscape types provide us with basic information concerning the interactions between regional planning, nature and society.

EVALUATION OF NATURAL RESOURCES AND ENVIRONMENTAL POTENTIAL

Another geographical feature of utmost importance in the relationship between environment and society is the evaluation of landscape or environmental potential.[1] Mankind is embarking upon an epoch when the utilization of mineral raw materials will be so enormous that existing resources can no longer be considered inexhaustible. In the last 20 years the consumption of energy has doubled. The rate of acceleration in material and power consumption considerably surpasses the rate of increase of population. Though of smaller dimensions, the same trend is shown also by food consumption. During the consumption and production process man seeks to find and make use of the advantages offered by this environment. At a certain point, however, the exploitation of the advantages offered by the environment will lead to environmental damage and beyond this point the disadvantages will tend to prevail with increasing frequency and embrace an ever wider geographical area. The stark fact is that the existence, progress and prosperity of mankind will sooner or later be threatened, unless the geographical environment is properly managed, i. e. unless long run regional planning is undertaken. Regional planning requires the geographical study of the environment. It is geographers who must deal with the landscape that is to be improved and developed by the planners.

The evaluation of the geographical environment provides indispensable basic information for regional planning. Not only are the present-day physical characteristics and conditions of the environment synthesized, namely, the sources of raw materials and energy and their balance, as well as natural- and anthropogene geo-processes, but the types of economic activity associated

[1] Landscape or environmental potential: natural resources + productive forces + mode of production + geographical position.

with the environment are also included as are the activity patterns of the inhabitants, the growth of settlements and demographic changes. The complex evaluation of all these factors provides a measure of the natural and economic potential of the environment, or landscape of the region in question. The complex evaluation of environmental potential is preceded by investigations by specialists from different disciplines whose job is to analyze and evaluate specific potentials, i.e. mineral, energy and agricultural resources and the potentials of other branches of production. In the environment specific potentials may differ one from another in importance and in trend of development depending on the present and future level of social and economic activity.

Some workers think it possible and necessary to develop a new branch of science whose task is to study the special relationships between the natural environment and society. This is surely moving in the right direction; but before it happens, the geographical and earth sciences should strengthen their integration with other parallel disciplines, so that the regularities and historical trends in the interaction between the geographical environment and society may be further explored and synthetized. Specialists predicting the immediate and future tasks of geography are at one in suggesting the launching of special post-graduate training courses and the urgent modification of teaching programmes and methods at institutes of higher education to ensure the solution of these problems.

REFERENCES

Pécsi, M. (1970): Geomorphological regions of Hungary. *Studies in Geography in Hungary, No. 6*, Akadémiai Kiadó, Budapest, p. 45.

Pécsi, M. (1973): Geographical problems of environmental research. *Acta Geol. Acad. Scientiarum Hung.*, Tom. 17 (1—3), pp. 233—241.

Pécsi, M. and Sárfalvi, B. (1964): *The geography of Hungary*. Collet's Holdings Ltd. London and Corvina Press, Budapest, p. 300.

Pécsi, M. and Somogyi, S. (1969): Subdivision and classification of the physiographic landscapes and geomorphological regions of Hungary. In: Research problems in Hungarian Applied Geography. *Studies in Geography in Hungary, No. 5*, Akadémiai Kiadó, Budapest, pp. 7—24.

Pécsi, M., Somogyi, S. and Jakucs P. (1971): Landscape units and their types in Hungary. In: *Hungary Geographical Studies*, IGU European Regional Conference, Budapest pp. 11—64.

THE LANDSCAPE TYPES OF HUNGARY

(Ed. by M. Pécsi, S. Somogyi and P. Jakucs)

I. CONTINENTAL FOREST STEPPE PLAINS PREDOMINANTLY AGRICULTURAL LANDSCAPE TYPES

Regulated Flood Plains: *Azonal low flood plains with grove- and swamp forest remnants:* 1. alluvial soils, natural levees; 2. meadow soil type; 3. boggy peaty meadow soil type; 4. alkali soil type. *Completely flat high flood plains of culture-steppe character:* 5. meadow soil type; 6. meadow, solonetz soil type; 7. meadow chernozem type.

Cultivated loess plains: *Chernozems on former forest-steppes:* 8. meadow chernozem type; 9. lowland-chernozem and chernozem soil type salty in deeper horizons; 10. loess plains with chernozems.

Sandy alluvial fan types: *Formerly wooded mosaic-like sandy areas:* 11. sand dune type with forest and sandy steppe meadow remnants; 12. levelled sandsheet type with acacias, gardens and vineyards; 13. sandy landscape types with chernozems, and of culture-steppe character; 14. sandy landscape type with brown forest soil and closed forest remnants.

Subcontinental deforested marginal plains with forest remnants: 15. chernozem–brown forest soil type; 16. brown forest soil type; 17. grey brown podzolic soil type.

II. HILLY LANDSCAPE TYPES PREDOMINANTLY AGRARIAN LOCALLY INDUSTRIAL REGIONS

Erosional-derasional hilly regions and foothill surfaces: *Subcontinental hilly regions with turkey-oak and oak remnants.* 18. chernozem soil type; 19. chernozem–brown forest soil type; 20. terrace and brown forest soil type; 21. grey brown podzolic soil type; *Subatlantic hilly regions with mixed forest remnants:* 22. chernozem–brown forest soil type; 23. brown forest soil type; 24. pseudogleyic type; 25. grey brown podzolic soil type.

Hills of intermountain basins: *subatlantic type with turkey-oak and oak remnants:* 26. brown forest soil type; 27. pseudogleyic type; 28. grey brown podzolic soil type.

III. UPLAND LANDSCAPE TYPES PREDOMINANTLY FOREST

Low uplands with turkey-oak, hornbeam- and oakwoods (up a height of 650 m a. s. l.): *Types of more extreme (subcontinental) character:* 29. volcanic uplands mainly covered by grey brown podzolic soil types; 30. limestone uplands mainly covered by rendzina and grey brown podzolic soil types. *Types with sub-mediterranean climate with two precipitation maxima:* 31. limestone upland types, rendzina and grey brown podzolic soil; 32. crystalline block upland type covered with grey brown podzolic soil. *Types with more abundant precipitation (sub-atlantic-middle European):* 33. volcanic and crystalline upland types covered by erubase and strongly acidic brown forest soils; 34. limestone upland type covered by grey brown podzolic soil.

Forested highlands. Beech forest types with middle-European climate: *Strongly dissected volcanic highlands:* 35. type covered by erubase and podzolic brown forest soil. *Heavily dissected limestone highlands:* 36. type covered by rendzina and brown forest soils.

THE LANDSCAPE TYPES OF HUNGARY

1
2
3
4

18
19
20
21

5
6
7

22
23
24
25

8
9
10

26
27
28

11
12
13
14

29
30
31
32
33
34

15
16
17

35
36

PART SIX

SUPPLEMENT

SUMMARY OF PAPERS AND DISCUSSION

The papers presented at the seminar on the broad theme of regional development fall naturally into five narrower groups each concentrating on a particular aspect of regional development. This division has been preserved in this publication of the proceedings of the seminar. The five groups are:

— regional planning and regional policies;
— agriculture and regional development;
— industry, tourism and regional development;
— regional evolution and regional problems; and
— landscape classification and regional development.

A summary of the content of the papers in each group together with the main themes developed during discussion are presented here.

REGIONAL PLANNING AND REGIONAL POLICIES

Five of the papers deal with regional planning and regional policies. E. K. Grime in his contribution "Regional plan making: aims, objectives and political background", presents a brief overview of regional plan making in Britain from the Manchester Region Plan of 1926 with its strong physical emphasis and the 1945 Abercrombie Plan for Greater London to the National Plan of 1965 and the establishment of Regional Economic Planning Councils and Boards. The role of local authorities in physical planning is discussed and the fundamental difference between regional planning on the one hand, and the identification of regional problems on the other, explained. In the bulk of his paper he examines the background and aims of two major regional plans, those for the North-West of England and for West-Central Scotland. He concludes that the advisory nature of regional planning is helpful for local authorities but to be really effective it must have a statutory base and be related to a national plan with clear goals and objectives.

Regional development and regional planning in Hungary are discussed by J. Kóródi in his paper "Regional development policy and regional planning in Hungary". After describing the main directions of regional development in Hungary during the last 30 years, he lists the main problems of the territorial structure of the country. The paper goes on to analyze the main principles of regional development policy as they relate to the forces of production and the evolution of the settlement network. In a detailed section on regional planning it is stated that physical planning in the Hungarian context is not a projection from the present structure of the economy but

is rather the setting out of ultimate long term objectives. Physical plans contrast with regional development plans which aim to eliminate differences in the level of development among the various regions of the country. Regional development plans are drawn up for various geographical areas as well as for the country as a whole and are of various durations. The paper ends by discussing the economic regulators that are used to stimulate and direct regional development.

The development of local and regional planning in England is described by R. H. Osborne — "An outline of the evolution of local and regional planning in England". The different roles of local and central authorities in the fields of administration and planning are contrasted and a trend towards regional centralization and the long term weakening of the position of local government is identified. After outlining the growth of planning by local authorities, which is described as primarily physical and land-use planning, the paper goes on to consider the local and regional functions of Central Government and public bodies, such as the Milk Marketing Board and the nationalized industries. The first real attempt at economic planning by the Central Government was the identification in the 1930's of the Depressed Areas which have evolved into the Development Areas of today and the various attempts to attract employment in manufacturing industry to them. Intervention has also been extended to the tertiary sector in an attempt to decentralize office location. The trend towards regional planning with the establishment of non-executive Regional Economic Planning Boards and Councils and Economic Planning Regions is a comparatively late development. In a postscript the planning implications of the reform of local government, the Kilbrandon Report and the European Community are considered.

S. Radó in his paper "Maps for planning" stresses the indispensible role of maps and atlases at various scales in furthering regional development and planning. On the basis of this role, maps can be divided into two broad groups: those depicting the natural endowments and social and economic conditions of the planning area, and those which are the vehicle for presenting planning conceptions and ideas. Questions of data comparability, timeliness of publication, scale and the use of colour reproduction are important factors that have to be considered. Planning information must be collected through constant monitoring of change and presented to the planners with the minimum of delay. The publication of loose-leaf volumes of maps and atlases of restricted use are some of the devices that can ensure this. By way of illustration regional planning in Hungary is described and its cartographic requirements analyzed.

In his examination of the "Future of British regional policy", M. E. C. Sant identifies two courses of action: the first would accept the continuance of some regional disparities, while the second would involve the investigation of new measures to give a wider range of opportunities to the population of the less prosperous regions. The provisions of the 1972 Industry Act are considered unlikely to solve the regional problem. Six broad policy objectives can be identified greatest stress being laid on the relief of localized unemployment. The main policy instruments are the Development Areas, controls on the distribution of growth, government assistance to private investment

and spatially discriminant public expenditure. Job creation and industrial movement in response to policy have been large and generally regarded successful; but doubts remain about the policy itself in achieving the objectives, particularly in reducing territorial disparities which remains the key to future regional policy. It is concluded that unless policy objectives are diluted, the present instruments must be strengthened if the disparities are to be removed. A policy based directly on intercepting migration might remedy this deficiency.

DISCUSSION

Several themes emerged during the discussion relating to this group of papers; because of the different economic systems of the two countries, much of it centered on the differences in planning between the United Kingdom and Hungary. The Hungarian participants sought information regarding the distinction between physical and economic planning in Britain, the nature of a structure plan, the type of information used in the preparation of plans and the time scale of planning. It was pointed out that in Britain planning is concerned with land-use rather than economic targets. The broad conceptions are developed in the strategic plan for an area and concern such things as general population evolution, long term employment needs and transport requirements. The strategic plan carries no weight in law. A structure plan by contrast, contains concrete land-use proposals, that is transport, industrial and residential zoning. It has a statutory base, is carried out by local authorities and can relate to an area as large as Greater Manchester or as small as a minor county borough. A distinction must be made, however, between development planning and development control, for it is the task of the counties to draw up the structure plan but that of the district councils to implement it. The separate roles of the Regional Economic Planning Councils and the Regional Economic Planning Boards were discussed.

In Hungary three types of plan exist — the national plan, sectoral plans and local plans. The national plan, drawn up by the Central Planning Office, sets out broad economic targets, such as growth in national income and rate of economic expansion. Sector plans are for the various branches of the economy, industry, agriculture, etc. and the targets are set by the responsible ministries. The county authorities also have planning functions and prepare local economic plans for submission to the Central Planning Office. The equivalent of the British structure plan, i. e. land-use allocation is in the hands of the local authorities. Naturally conflicts arise within this system and compromise must be reached between national, sectoral and local planning interests. In Hungary, planning has the backing of the law and is compulsory, which contrasts strongly with the advisory nature of much of British planning, i. e. the Regional Economic Planning Councils and the strategic plans.

The system of local administration in Britain came in for some comment. Amazement was expressed at its complexity with its urban and rural districts, municipal and county boroughs. Clarification of the new administrative areas associated with the recent local government reform was sought, particularly

the siting of the head quarters of the new administrations. Out of this developed a discussion of the crucial importance of the siting of the new councils and their impact on local employment, especially in marginal regions. In parts of Wales and Scotland, for instance, there is fear that this decision could adversely effect the prospects of the centres not selected. It was felt, however, that on balance, the new system of administration would facilitate planning although difficulties were foreseen. The new counties with their larger populations should mean a reduction in the need for planning regions, although concern was expressed at the separation of the metropolitan counties from their hinterlands. It was also felt that, with their restricted finance, the counties were not the proper vehicle for establishing priorities within the framework of plan implementation. Conflicts were also likely to arise between the new counties and the policies of the large public bodies, such as British Rail and Area Hospital Boards, which have autonomy outside local planning. Thus a rail link closed by British Rail in the national interest may conflict with the local interest.

There was a lively discussion about problems relating to the development of the more backward areas of each country. Information was sought by the British participants regarding the relative weight of Budapest in the geographical framework of Hungary. In reply it was stated that too much of the economic, social and cultural life of the country was concentrated in the capital which hindered the development of provincial areas, and because of this the policy is to maintain Budapest at its present size of 2·2 million until 1990. Attempts are being made to encourage various Budapest industries to move to provincial areas and some success has been achieved here. However, the decentralization of the tertiary centre, particularly of office accommodation, will have to await the next five year plan. At present four-fifths of the nation's research institutes are located in Budapest. Most of the important industrial enterprises of the country have their headquarters in the capital. Great difficulties for the policy of tertiary decentralization were foreseen as exemplified by the new Technical University at Miskolc for while it is 110 miles from Budapest, 50% of the staff reside in the capital. There are no plans physically to move population out of Budapest. There are also no plans to run down the most difficult and backward areas along the British model for part of the County Durham coal field.

In reply to questioning about the persistence of development areas in Britain, it was stated that they have remained in this category for so long because of the continued decline of their traditional industries. There is also a tendency for new industry in these areas not to soak up the unemployed but to attract workers from the existing active labour force. Additionally, the political aspect must not be ignored for once special government help has been given to a particular region, it is difficult to cancel it because of internal and general political considerations. Although Britain has no growth centre policy, unlike Hungary, there is an implicit system of growth centres. These are the large cities in the development areas which attract new employment through their policy of trading estates. The view was expressed, however, that the existence of these implicit growth centres could be a further reason for the backwardness of the development areas, for industry tends

to go to them to the detriment of the more backward outlying districts. The example of Scotland was quoted in which industry is attracted to Glasgow and Edinburgh rather than to the real problem areas.

After more questioning concerning the technicalities of development areas, for instance the type of help they receive, and the implications of special development areas, the discussion reverted to the more general theme of regional disparities. The view was expressed that as no advanced country has ever solved the problem, regional imbalance should be regarded as an aspect of the nature of economic geographical life. Viewed in this light, the dilemma facing Britain is not so much one of regional machinery but one of goals. We should be asking ourselves whether we wish to fossilize the present population distribution and if not, what population distribution are we aming for. It was generally agreed that disparities are inevitable but the really important question is the scale of disparities we are willing to tolerate. In this context more research is required. Thus population congestion in the South East of England is regarded as undesirable, although as yet no objective means of the definition of congestion exist. In the economic sense, it only appears when development is hindered but this is not yet the case in the South East. There was also general agreement that present policies are undesirable to the extent that they discourage population mobility. In areas of high unemployment, the reaction is always artificially to provide new jobs to maintain the population: in other words, planning for decline is an option that has never been squarely faced in Britain, although the EEC has attempted to tackle it. While not wishing to advocate wholesale depopulation of regions, the seminar felt that a strong case could be made for encouraging greater intraregional mobility, while discouraging explosive inter-regional migration.

A regional question of some importance in Hungary is the special problems of border areas and some discussion on this theme occurred. It was stated that the degree of co-operation that is developing between Hungary and its neighbours in this field is encouraging. Fruitful collaboration is already under way with Czechoslovakia. A common cross-border development plan is being implemented, the most tangible result being the agreement to regulate the Danube above Budapest by building hydro-electric power stations, one at Nagymaros the other at Gabčikovo and thus improving the navigability of the waterway based on new standards. Recent discussions on cross-border co-operation with Austria and Yugoslavia have also ended successfully. The contribution of geographers to these developments is in the framework of map preparation. In recognition of the importance of this, there is a suggestion to establish a COMECON cartographic section.

AGRICULTURE AND REGIONAL DEVELOPMENT

Three participants to the seminar presented papers on the connections between agriculture and regional development. In his contribution "The delimitation and characterization of agricultural areas with deficient physical resources", T. Bernát states the need to achieve a territorial balance in

development. Such an objective is not, however, realistic unless it stems from a policy based on an appreciation of regional disparities, for development plans formulated from average conditions can be applied successfully to neither advanced nor backward areas. In the paper, the identification of backward agricultural areas is based on the gold crown value of land, representative of soil conditions, and nine economic indicators. The analysis suggests that one quarter of the agricultural area of the country is backward economically, mainly due to physical deficiencies. As one third of the co-operative farm population lives in such areas, this represents a considerable social and economic problem. Incomes are relatively low, farming practice is generally of a poor standard, and the infrastructure is deficient. Government intervention is necessary to achieve greater balance between these and better endowed areas.

J. T. Coppock, in his paper "Regional changes in the agricultural geography of Great Britain 1959—1973", describes the marked regional contrasts in the agricultural geography of the country, which stem from its physical geography and strategic and economic considerations. The balance between farm enterprises, however, is continually changing in response to farmers' reactions to the weather, the outbreak of disease, and variations in costs and prices. Within the framework of overall agricultural policy, there are no regional policies as such, but rather policies with regional implications, one example of which is the hill sheep subsidy. Two main trends which have regional implications are recognized. The first is the increasing awareness of the amenity value of agricultural land. The second is the development of links between agriculture and other branches of the economy. Thus the growth of urban inputs to agriculture is creating greater regional variability primarily because of the influence of transport costs on these inputs — regional disparities in the application of fertilizer provides an example. Greater regional variability is also being generated by the rise of processing — the freezing industry in particular localizes particular production types. Specialization in British agriculture is thus increasing regionally, although the trends vary from area to area within the country.

Gy. Enyedi approaches "A regional subdivision of the agricultural space of Hungary" through the application of factor analysis. The regionalization is based on both the economic and production structure of farming because homogeneous production structures can develop under different sets of economic conditions. A regional subdivision embracing economic structure should offer a more appropriate foundation for regional planning than previous attempts based solely on production typologies. The 3016 collective farms were selected as basic data units and their economic and production structures characterized by twelve variables. The regionalization presented in the paper is based on the first factor only, representing income and asset supply and six regional types are established. The main farming areas with high incomes and high asset supply are found in the Little Plain, the Mezőföld and the Danube Valley, the loess ridges of the Great Plain, the vicinity of Budapest and the southern foothills of the Northern Upland. The regions where the level of farming is most backward generally correspond with those identified by T. Bernát and include the western parts of Transdanubia,

the hilly areas of Zala and Somogy, the Dráva region, the Danube-Tisza Interfluve, the Northern Uplands, the Nyírség, the Körös-Berettyó region and the northern section of the Tisza Valley.

DISCUSSION

Several themes were again developed during discussion following the papers. Information was sought by the British participants concerning the size and organization of co-operative farms in Hungary. In reply it was stated that the size of co-operative farms varied from region to region averaging about 1000 hectares in the western part of the country and 3—4000 hectares on the Great Plain. In the context of effective management, it appeared that the optimum size of farms was approximately 2000 hectares on the Great Plain and 1000 hectares elsewhere. Regarding organization, co-operative farm managers are elected by the membership for a period of three years. Specialized personnel, such as veterinary surgeons and plant engineers are appointed by the elected management committee. The income of co-operative members is derived from their share of the profits and from rent received for land originally assigned to the co-operative. There was some discussion of the role of management quality in inter-farm variability in productive performance. In Britain the concensus is that this factor is now more important than differences attributable to variations in natural endowments. The same cannot be said for Hungary, however. In the last few years there has been a marked improvement in overall management ability and there is now far less variation than previously. It was only during the initial phases of collectivization that the ability of farm management, for instance in obtaining credits was an important factor accounting for inter-farm disparities.

Some discussion centred on the problems of marginal agricultural areas. The importance of the afforestation of such regions in Britain was stressed although it was pointed out that few benefits to rural employment have been derived from it because much of the forestry work is based on towns and/or carried out by contractors. In Hungary, research has been going on into long-term agricultural land utilisation. Some experts have favoured the withdrawal from agricultural use of up to half a million hectares of land, but this has been attacked by economists and has not been incorporated in the long-term national economic plan. It seems rather that this land will be afforested although it is an expensive proposition. It is unlikely that the backward agricultural areas in Hungary can offer any significant tourist potential, the pre-Alpine areas of the western part of county Vas excepted. Tourism requires high investment in infrastructure and offers only seasonal employment. The backward rural areas, on the other hand, require the creation of permanent employment which only auxiliary industrial activities are likely to bring.

The discussion subsequently moved towards a general exchange of views about agriculture in the two countries. In reply to questioning, it was stated that 90% of agricultural land in Britain is involved in the support of livestock, which accounts for two-thirds of agricultural output. Mixed farming

is becoming increasingly difficult to define and is perhaps best regarded as farming that defies classification. There are, however, signs that the trend in some areas is now one of greater diversification as the detrimental effects on soil structure of virtual mono-culture and the over-reliance on artificial fertilizers to the exclusion of organic manure are becoming more widely recognized. It is difficult to compare farm and non-farm incomes in Britain, for while it is clear that the income of farm labourers is between 40 and 50% below that in industry, the income of farmers is spread over a very wide range. Depending on size and type of farm, the latter can fall within the top one per cent of incomes in the country for some of the larger farmers of East Anglia, or can be below that of a farm labourer in the case of hill farmers on poor land. In the case of many farmers of the later category, disposable income depends entirely upon the hill farm subsidy. If this subsidy were withdrawn it would probably lead to greater rates of out-migration from the hill areas, although it must be remembered that many hill farmers do not think primarily in economic terms. Joining the European Economic Community should not, on balance, have an adverse effect on British farming. Special payments to the most difficult areas will continue and only horticulture is likely to suffer severely.

Regarding agriculture in Hungary, there is a fairly strong historical inheritance in those regions where physical factors play a significant role. On the other hand, important changes have also occurred, notably on the Great Plain where animal husbandry has become an important enterprise. It is also apparent that when measured in terms of production value, there has been a strong trend towards regional equalization since the 1930's. It was not felt that the reorientation of Hungarian trade during the post-war period has had any important impact on the patterns of agricultural production.

INDUSTRY, TOURISM AND REGIONAL DEVELOPMENT

A critique of the contribution of tourism to regional development was presented by G. J. Ashworth in his paper "The regional impact of tourist development — the case of Southsea (Hants)". He states that the assumption is widespread that tourism is a suitable vehicle of economic development for regions of relative economic backwardness because tourism uses resources that are disincentives to other activities, such as rugged terrain, relative isolation and cultural conservatism. The local economy also gains from visitor spending. However, there are strong objections to the assumed simple connection between tourism and development. Recent research has shown that the tourist multiplier is probably not as large as previously assumed; tourist activities tend to concentrate at limited locations and the benefits are not diffused throughout the region; many of the costs associated with the development of tourism have been underestimated because of the difficulty of measuring them; there is little coincidence in Britain between backward regions and the spots that tourists actually visit. Two main conclusions can be drawn from the investigation of Southsea; the first is that benefits from tourism can be considerably less than anticipated while costs are high-

er; the second is that the use of tourism as a generator of regional economic development presupposes a national organization that can implement regional tourist policies. No such organization as yet exists in Britain.

Gy. Bora in his paper "Effects of changes in the spatial structure of Hungarian industry on the factors of industrial location" describes the growth of industrial employment in the country since 1947. During the first 10 years, policy concentrated on the rapid development of the basic materials industry and although the proportionate share of Budapest in total industrial activity fell, the bulk of the country remained underindustrialized. It was thus on these regions that industrial development policy subsequently focussed; more than half of all industrial investment was directed towards such areas between 1960 and 1970 in consequence of which industrial employment increased by a quarter of a million jobs. The rapid development of the national economy has necessarily led to a re-evaluation of the factors of industrial location because of the shift from labour intensive to capital intensive output, the structural transformation of the national economy, industrial specialization within the socialist camp, the changed transport structure and opposing tendencies towards centralization and decentralization within the economy. As a consequence, raw material locations are less important than previously, although water is playing a more decisive role. On the other hand, the significance of infrastructure and industrial linkage is increasing while market locations are becoming more attractive. The introduction of indirect methods of economic management has been another important innovation. Finally a model to optimize the location of industry in Hungary to 1985 is described.

W. F. Lever in his paper "Selectivity in British regional policies for industry" examines the utility of the income multiplier as a guide to those industrial sectors and plants which may most suitably be located in the development areas. He describes the evolution of regional policy towards industry and demonstrates that the use of government funds for the purpose of transferring employment from the prosperous to the depressed regions has always been selective in a spatial and sectoral sense. Spatial selectivity is ensured by the designation of development areas, special development areas, intermediate areas, and derelict land and clearance areas. Sectorally, priority has been given to manufacturing in preference to services because of acceptance of the concepts of the economic base and the multiplier. However, a considerable body of opinion holds that this simple division is not sufficiently discriminating and that much of the money pumped into the depressed regions in the form of new industry leaks back very rapidly to the prosperous regions. From the regional policy standpoint the most suitable industries are those which import few or none of their inputs from outside the region and export as much as possible of their product to draw further revenue into the region. The income multiplier forms a very useful indicator in che definition of such industries.

D. J. Spooner examines some of the problems that peripheral rural areas face in attracting new industry in his paper "Industrial movement, rural areas and regional policy". His analysis is based on the case study of Devon and Cornwall. Major long term changes currently occurring in factors determining locational choice are reviewed and their effect on the ability of the

rural periphery to attract new industry from other regions analyzed. It is concluded that these changes in the locational framework are on balance detrimental to rural peripheral areas in their attempts to attract mobile industries. Economic and spatial considerations still tend to favour large urban complexes for although government policy apparently supports the rural periphery, it does not adequately counterbalance the advantages of industrialized, depressed areas. This pessimistic picture of the possibilities of industrial growth in rural peripheral areas is in contrast to the encouraging developments in Devon and Cornwall. There the economy is healthier than for many years and labour shortages are appearing. The success of the region in attracting industry can be attributed to the large size of Plymouth, favourable amenity factors, the cumulative effect of industrial movement, and the favour with which the region is looked upon by potentially mobile industry in the London region.

The problems facing much of British heavy industry as exemplified by steel manufacture were considered by K. Warren. In his paper "British steel rationalization and regional planning" he points out that in long-industrialized countries, such as Britain, economic growth involves the elimination of old units as well as the expansion of the better located existing operations and the establishment of wholly new ones. Rationalization along these lines has been proposed by the British Steel Corporation in their Development Strategy whereby capacity will increase to 36 million tons, the workforce will decline by 50,000 and by 1983 four-fifth output will be concentrated at five large sites. If fully implemented, problems of labour redeployment of the decay of old housing and infrastructure and the demand for new and the creation of industrial dereliction will emerge on a new, unprecedented scale. There are thus social and political pressures to soften the adjustment in those regions of slow economic growth which is sometimes translated into resistance to plant closure and opposition to new and better locations. It is thus essential to think in terms of overall regional planning, to decide on the ideal pattern of steel location nationally and to pursue every effort to realize it. Otherwise British Steel will become increasingly uncompetitive in relation to the rest of the EEC and elsewhere.

DISCUSSION

The discussion relating to these five papers was both lively and diverse. It was generally agreed that tourism is not in every case the solution to the problems of backward rural areas. In Hungary the fact that tourist activities fall basically into two groups, namely those that are profit making such as night clubs and those that are subsidized because they are also used by the local population, for instance transport and restaurants — makes the contribution of tourism to the local economy very difficult to calculate. In defence of tourism it was stated that in many areas of sparse population, for example in the Highlands of Scotland and in Wales, tourism is the only justification for the maintenance of local services. There is thus the need to spread tourist developments widely within a region rather than to concen-

trate them on a single large hotel complex. Against this positive benefit, however, one must offset the relative aggressiveness of the tourist sector in relation to other activities. Areas that are touristically minded can become obsessed with preservation which makes them hostile to the introduction of new economic activities and even opposed to beneficial changes in agricultural practice. Some of the participants took up the suggestion that more institutions should be created in Britain to promote tourism. The function of such organizations was seen as one of management and planning whereby greater control would be exercised over tourists in the interests of conservation and greater diffusion.

The question of selectivity of industrial location generated much comment. In Hungary, this is an important factor in relation to the further development of industry in Budapest and it has now been generally agreed that only those branches should be located in the capital where the value added during manufacture is high. In reply to questioning from the Hungarian participants, it was stated that in Britain although there are variations from industry to industry, the Government prefers large plants to move to development areas. It has been found that firms employing between three and four hundred people move the greatest distances and these are significantly larger in size than those moving shorter distances. Additionally, branch plants tend to move further than complete transfers. Willingness to shift to development areas also varies according to factory ownership and here American companies have a very good record, probably because of a different perception of distance from the other side of the Atlantic. All firms locating in development areas are eligible for assistance which means that private industry has received considerable sums of money from the Government. However, when measured in strict economic terms it is likely that on balance firms have suffered from the Government's decentralization policy by being persuaded to locate in the less advantageous development areas, rather than establish themselves or expand at first preference sites. There are of course examples where the reverse is true and the exploitation of Scottish oil provides one such instance. Because Scotland is a development area, the oil companies received Government subsidies in establishing their Scottish operations even though they would have gone there in any case. Although in this particular instance assistance can be justified as recognition of risk capital, a strong case can be made for a combination of greater spatial and sectoral selectivity as regards development areas.

The changing factors of industrial location came under scrutiny. Site costs are becoming more important in Britain as the price of land rises but this is somewhat alleviated by the existence of central government and local authority trading estates on which cheap sites are offered. It was felt that economic geographers should place greater emphasis on the material costs of industrial location. These are increasing in significance and one should no longer be content to talk vaguely of the "amenity factor" for instance. Amenity should be quantified and a move made towards a better understanding of the true cost surfaces involved. Regarding manpower, this can be a problem in rural areas of relatively sparse population. The costs of attracting skilled and managerial personnel can be high, although the rising standards

of communication, telephone, telex, etc, reduces the necessity to concentrate all the managerial skills at a branch plant. In Hungary, the existence of large villages in many of the backward areas of the country is a positive manpower feature.

The effect of the new economic policy followed in Hungary since 1968 on location decisions interested the British participants. It was explained that the large investment decisions involving state capital, such as the siting of an oil refinery are made centrally by the Government. On the other hand, companies expanding their plant from their own or borrowed resources can make their own decisions as regards location. However, there are incentives to locate in a preferred area in which case assistance is given by the Industrial Development Fund. To assist in decision making, an "information bank" has been newly set up to which, on the one hand firms seeking new locations and on the other municipalities offering locations subscribe information.

The role of COMECON in the field of socialist integration was also explained. International specialization in industrial production is becoming increasingly significant in Eastern Europe. For example, Hungary has been assigned a large share of the manufacture of buses and television sets for COMECON members. The manufacture of radios, on the other hand is now concentrated in Bulgaria. Hungary also co-operates with the Soviet Union and Poland in the production of motor cars by manufacturing many of the specialist component parts. Such co-operation has naturally had an influence on the location of industry in Hungary as have the new oil pipe-lines and electricity transmission grids built within the COMECON framework.

With regard to occupational mobility, government re-training facilities in the British mould do not exist in Hungary. After eight years of general education, a person can elect to go on to an Industrial Training School where a skill will be learned. In some instances factories organize their own training schemes and the example of Egyesült Izzó, which trains its own labour, attracted from rural areas, was quoted. In special circumstances, such as the closure of a coal mine, retraining possibilities are offered but these are neither general nor widespread.

Information was sought on the reasons for the locational inertia of the British steel industry. It was explained that in part this is a function of the normal conservatism of businessmen. The example of Consett was quoted where large investments were made just prior to nationalization to stave off possible closure. Although it is highly likely that inertia would have been even greater without nationalization, the future role of Government in maintaining the present patterns should not be underestimated for it has tried very hard to moderate the British Steel Corporation's radical proposals for rationalization.

In the general discussion that followed, it was suggested that rather than relocate the steel industry, the main consumers should move closer to it. Thus for example, it might make sense to shift car manufacture to South Wales. In reply it was pointed out that as the linkages within the motor industry are greater than those between the car makers and steel manufacturers, this is not really a practical proposition. Speculating about the near future it was felt that the price of iron ore would not follow the example set by

oil. For one thing, there is less homogeneity among iron ore than amongst oil producers, while iron ore is a much more widely distributed natural resource. It must be remembered that Western Europe has substantial reserves of low grade ore that could be used if necessary.

REGIONAL EVOLUTION AND REGIONAL PROBLEMS

In his paper "A simple regional evolution model illustrated by a case study of South Wales", G. Humphrys translates the dynamic regional economic model of Lithwick and Paquet into a geographical framework and applies it to the case of the industrial development of South Wales. Underlying the economic model is the economist's recognition that industry satisfies society's final demands by converting primary inputs into consumer needs. Industry is divided into primary (resource based) industry, secondary (manufacturing) industry, and tertiary (service) industry. The geographical translation of the model begins with the colonization of an unoccupied region by settlers intent upon commercial farming. At this stage economic output is firmly in the hands of the farmers and the dominant economic activity is in the primary sector. As the economy develops, import replacing manufacturing industry begins to appear and is located on the seaboard where imported and local raw materials can be most readily assembled. The consequent growth of population throughout the region allows manufacturing industry in the port city to take advantage of economies of scale, the service sector expands, inland manufacturing centres appear and manufacturing becomes the major element of the economy as the primary sector declines in relative importance. The final stage is represented by the rapid growth of the tertiary sector, the increasing dependence of manufacturing on imported raw materials, inter-urban rather than rural-urban linkages, and the dependence of the primary sector on local urban centes rather than on overseas markets.

The difficulties confronting the geographer in devising regional systems are admirably exemplified by the contribution of Gy. Krajkó. In his paper "Theoretical and methodological problems of research into economic micro-regions" he argues the significance of regionalization to regional planning and regional development. Micro-regions are the smallest territorial units than can be established while still retaining the format and functional characteristics of integrated economic regions. They must be fully investigated if the interrelationships between the economic, social and natural environments are to be fully appreciated.

In his paper "Mid-Wales: approaches to a problem area", C. Thomas draws attention to the two contrasting policies generated by the debate on regional backwardness — either to direct industry, to areas of high unemployment, or alternatively to facilitate the movement of surplus labour to areas of manpower shortage. Neither approach has seriously sought to deal with the problems of backward rural areas as opposed to the older industrial complexes. The problems facing backward rural areas find clear expression in Mid-Wales with its difficult terrain, marginality of farming and declining mineral exploitation. These problems have produced considerable outmi-

gration and an ageing population structure which has left the population weak demographically and less productive economically. The thinking of the late 1950's and early 1960's was to solve these problems within the existing structure of land use, i. e. afforestation, the extension of water catchments for outside needs and the encouragement of livestock ranching. Present solutions reject this view and emphasis is now laid on reshaping the out-moded settlement pattern and attracting light industry to selected centres. This policy has met with mixed success, however, as newly created jobs in manufacturing between 1961 and 1971 were exceeded by jobs lost through the contraction of agriculture, forestry, quarrying, transport and construction. Yet the rejection of the proposed Cambrian Mountains National Park and a Rural Development Board by the Government places a premium on the industrialization programme for solving the region's employment problems.

The transformation of the morphology and structure of rural settlements in Hungary undergoing rapid industrialization is considered by B. Sárfalvi in his paper "Regional differences in the urbanization process of rural settlements". It is pointed out that urbanization and its temporal and spatial connotations have been recorded from the aspect of urban settlements only. Most studies confine themselves to measuring and analyzing the increase in urban population thereby oversimplifying the essence and complexity of the process. This is because the rapid transformation of society, i. e. occupational restratification, internal migration and falling agricultural population — has also had a marked impact on rural settlements. Some have developed features characteristic of urban areas, while at the opposite extreme, others have regressed to purely agricultural settlements as former central functions have been shifted elsewhere. In general, the social transformation of rural settlements has been both marked and rapid. Not only has the proportion of rural population occupied in the non-agricultural sectors increased, but the centre of gravity of the secondary and tertiary sectors has moved towards the villages. The occupational transformation, however, respresents only the most rapidly changing feature of this complex process; it is also apparent in the provision of public utilities, the structure of rural incomes and consumption and the educational level of the population. Variations in the speed and extent of this transformation form the basis for classifying the settlements of Hungary into four distinct areal types.

DISCUSSION

With regard to the application of the regional evolution model to South Wales, it was explained that the agricultural primary phase was replaced there by mining and smelting. Mining is now in both relative and absolute decline and the former important non-ferrous metals sector in its traditional role disappeared with the closure of the last zinc smelter in 1971. A healthy aluminium and titanium industry remains but this does not involve smelting. The question of feedback came in for some comment, specifically concerning a possible shift back from the manufacturing centres to former areas of primary production. It was agreed that feedback is an important process and

WE RECOMMEND
THE FOLLOWING VOLUMES
OF THE SERIES STILL AVAILABLE

Vol. 5
RESEARCH PROBLEMS IN HUNGARIAN APPLIED GEOGRAPHY
Edited by B. Sárfalvi
In English • 203 pages • 60 figures • 6 tables • 17×25 cm • Cloth

Vol. 6
GEOMORPHOLOGICAL REGIONS IN HUNGARY
M. Pécsi
In English • 45 pages • 21 figures • 1 map in supplement • 17×25 cm • Cloth

Vol. 7
RECENT POPULATION MOVEMENTS IN THE EAST EUROPEAN COUNTRIES
Edited by B. Sárfalvi
In English • 92 pages • 11 figures • 18 tables • 17×25 cm • Cloth

Vol. 8
PROBLEMS OF RELIEF PLANATION
Edited by M. Pécsi
In English • 151 pages • 49 figures • 17×25 cm • Cloth

Vol. 9
THE CHANGING FACE OF THE GREAT HUNGARIAN PLAIN
Edited by B. Sárfalvi
In English • 183 pages • 37 figures • 34 tables • 24 maps in supplement • 17×25 cm • Cloth

Vol. 10
BUDAPEST. AN INDUSTRIAL—GEOGRAPHICAL APPROACH
I. Bencze and E. V. Tajti
In English • 168 pages • Numerous figures and tables • 17×25 cm • Cloth

Vol. 11
MAN AND ENVIRONMENT
Edited by M. Pécsi and F. Probáld
In English • 245 pages • Numerous figures and tables • 17×25 cm • Cloth

Distributors
KULTURA
H-1389 Budapest, P. O. Box 149