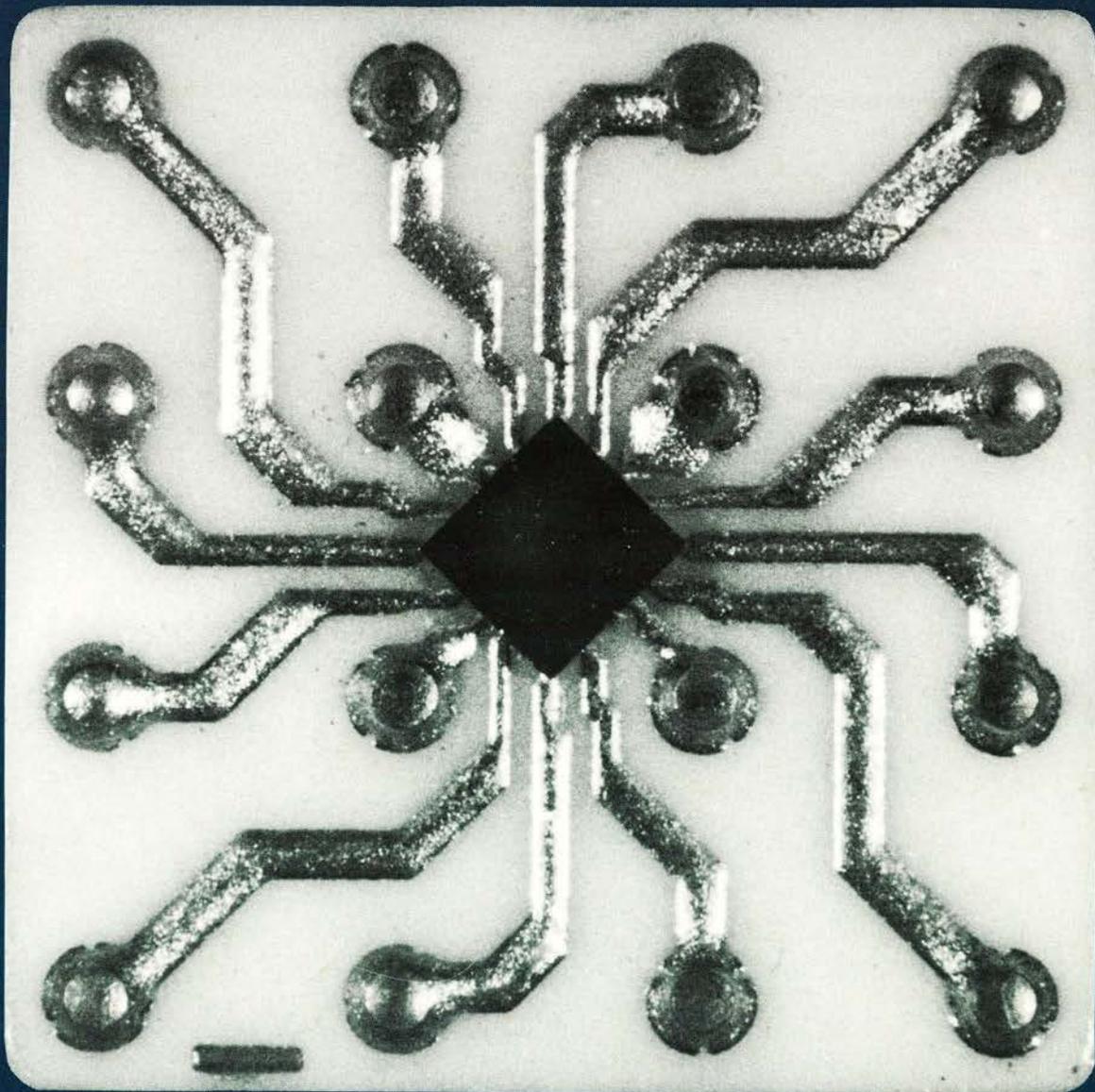


# the **OECD** **OBSERVER**

**A NEW INFORMATION  
INFRASTRUCTURE**



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COVER: The "chip" - the black square at the centre of the cover photo - surrounded by its ceramic support, is magnified twelve times in the photo. On a chip similar to this one, an entire mini-computer (microprocessor) containing up to 64,000 electronic components may be built. The microprocessor is one of the basic elements in the information revolution described on page 10.

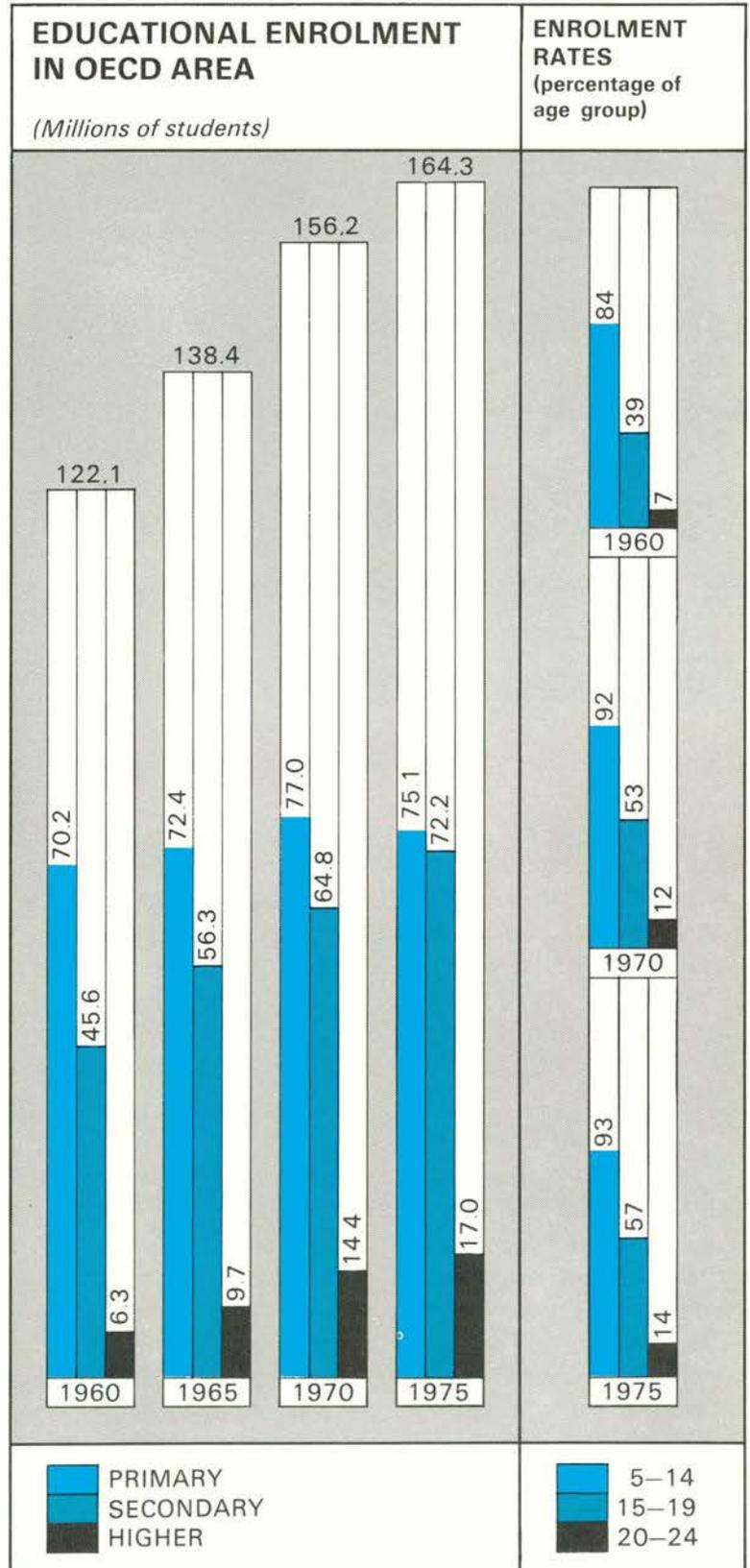
# Education Ministers Discuss: THE ECONOMIC AND SOCIAL CONTEXT OF EDUCATION AND ITS RELATION TO WORKING LIFE

At the first meeting of OECD's Education Committee at Ministerial level on 19th and 20th October, Ministers focussed on two major issues:

- how to raise the overall quality of education and to continue to widen access to educational opportunities against a background of economic uncertainty and structural change
- how to reinforce the role of education in preparing the young for working life and facilitating their entry into employment (1).

Ministers were satisfied that the considerable expansion of education since the early Sixties (see Chart and Table 1) had gone far to raise the general level of education in society and had considerably reduced educational inequalities. Unfortunately, in many OECD countries, some disadvantaged groups are still not able to benefit fully from the education offered, and this faces the authorities with a major task of providing such groups with education better adapted to their needs.

(1) Consultations were held prior to the meeting with OECD's Business Advisory and Trade Union Advisory Committees (BIAC and TUAC) on the main themes.



Source: *Educational Statistics in OECD Member Countries*

These data relate to all OECD Member countries and exclude Yugoslavia. Except in certain cases they concern full-time enrolments only. For some countries the missing data have been estimated.

The economic difficulties of the 1970's, together with growing concern on the part of governments about the very rapid increase in total public expenditures on the social services, including education, has created two additional major problems. The first is the financial restrictions imposed upon further educational growth, which often necessitate the reordering of priorities. The second is the contraction of job opportunities. This has led to many young people in the OECD area as a whole being unemployed (see Table 2). Although not responsible for this critical situation, education systems in many countries were exposed to



Emile van Lennep, OECD Secretary General  
with Aaron Païs.

*There is no point in trying to conceal the essentially political nature of certain key issues which we are facing in the field of education. They touch on some of the basic determinants of the future development of our societies. I wonder, in fact, whether we have yet grasped the full significance of the impact of this unique historical phenomenon on the political, social and economic structures of our societies.*

*There is no doubt, for example, that rising levels of education, more widely spread throughout the population, have played an important role in altering the political balance in our societies. And much of the debate about education today – for example, whether there is "over-education", as some would like to think, or "under-education" as others view it – is politically motivated. In the final analysis, this is a matter of the aspirations and capacities which education generates among various social groups: to have full access to the tools which will allow them to improve their status in society – that is to various forms of political expression.*

Dr. Aaron Païs,  
Minister of Education and Science, the Netherlands,  
Chairman of the Meeting

## 1. ENROLMENT RATES BY MAJOR AGE GROUPS (%) - 1975

	5-14	15-19	20-24
Australia	91.2	46.1	5.5
Belgium	99.4	61.3	11.1
Canada	97.2	66.4	14.5
France	99.8	51.3	9.9
Germany	87.5	51.3	11.1
Italy	93.1	40.8	10.8
Japan	97.6	76.3	14.5
Netherlands	99.2	57.5	12.3
Norway	78.8	63.4	19.3
Portugal	74.1	29.6	11.4
Sweden	82.3	57.1	14.4
United Kingdom	100.0	43.9	7.5
United States	99.4	72.0	21.6

Source : *Replies of Member countries to OECD questionnaire in Full-Time School Enrolment 1960-1980.*

## 2. YOUTH UNEMPLOYMENT RATE

% of age group 15-24

	1970	1973	1975	1976	1977
Australia	2.5	3.8	8.9	9.0	..
Austria	1.4	1.4	1.4	(1.4)	..
Canada	10.3	9.7	12.2	12.5	14.5
Finland	3.0	4.5	4.3	(8.3)	(14.9)
France	1.5	2.9	7.6	..	11.7*
Germany	0.3	1.0	5.8	(5.2)	(5.4)
Italy	10.2	12.6	12.8	(14.4)	23.8
Japan	2.0	2.3	3.0	3.1	(3.2)
Spain	2.3	6.7	10.5	12.5	..
Sweden	2.8	5.3	3.6	3.6	4.3
United Kingdom	2.7	(2.9)	(7.4)	(13.1)	(14.1)
United States	9.9	9.8	15.2	14.0	12.9

Austria : unemployed aged less than 30, labour force aged 14-24 for the years 1970-73 and 15-19 for years 1975-76.

Canada : revised series from 1975 ; 1975 rate for the old series was 12.7

Finland : revised series from 1976

Germany : unemployed aged less than 25, labour force aged 15-24.

Italy : rate for 14-25 year olds.

Sweden and United States : rate for 16-24 year olds.

United Kingdom : unemployed aged less than 25, labour force aged 16-24 ; rate for Great Britain.

\* March, 1977 .. not available ( ) Secretariat estimates

strong public pressure to respond to changes in the labour market and to help young people to acquire employable skills and competencies. It was noted that some governments have undertaken the obligation to offer alternative educational, training or work opportunities to all young people.

Ministers concurred that education, which serves plural aims, should not be constrained in reaction to short-term external factors. Nevertheless, it must be flexible enough to respond imaginatively to emerging social and economic demands bearing in

mind economic constraints. Against this background, Ministers adopted the attached Declaration on Future Educational Policies in the Changing Social and Economic Context. (See Inset)

Ministers stressed the need for increased educational exchange and co-operation between Member countries, including expanded facilities for young people to have access to education and training experience in countries other than their own. They expressed their appreciation of the long-standing co-operation of their

governments in the field of education within the framework of the OECD and welcomed the present opportunity to discuss common issues and problems in the Education Committee at Ministerial level and they expressed the wish to have such meetings again at suitable intervals. They invited the OECD to review as necessary the development of the policy orientations set forth in the Declaration and to bring new findings to the attention of Member countries as appropriate.

## DECLARATION ON FUTURE EDUCATIONAL POLICIES IN THE CHANGING SOCIAL AND ECONOMIC CONTEXT

**M**inisters of Education of the OECD Member countries, and of Yugoslavia, meeting in the framework of the Education Committee of the Organisation,

*recognising that*, in response to new economic and social conditions within the OECD area and changing economic relationships with other countries in the world, Member countries are now in a process of adaptation which requires, on the one hand, the restructuring of industry and the creation of more skilled jobs and, on the other, more knowledge, higher intellectual capacities and occupational skills, and greater inventiveness and flexibility throughout the population;

*recognising that* there is a common desire to improve the quality of life for all, specifically by increasing individual responsibility in the various walks of life, making intensive efforts to assist disadvantaged social groups and encouraging the participation of individuals in life-long learning;

*recognising that* persisting high unemployment in the OECD area as a whole, which weighs with particular severity upon the young in many countries, calls for a vigorous response from education in collaboration with other social and economic agencies, so as to ensure the full development and use of human resources;

*recognising that* the fundamental purposes of education must be upheld and continuously developed for the general good, so as to provide all, young and adults, with:

- the basic knowledge, skills and the capacity to develop attitudes needed for their personal development and in their roles as individuals, family members, workers and citizens
- the access to culture needed to lead a fuller life in an increasingly complex and interdependent world
- the capacities to contribute creatively to social and economic changes;

*recognising that* constitutional or institutional arrangements have implications for decision-making in educational policies that vary from one country to another,

*having regard* to constitutional constraints and/or exclusive jurisdictional powers which apply in certain Member countries, with respect to educational matters,

### DECLARE

*That, in the light of the changing economic and social context, they agree that the following aims deserve priority consideration in the formulation of policies in the Member countries and Yugoslavia:*

- to promote the continuous development of educational standards, as conceived within each country, and to ensure that all young people are helped to acquire the basic competencies needed to embark successfully upon adult life;
- to develop schools as active communities which offer a

stimulating environment, contributing to the self-reliance, sense of responsibility and co-operative spirit of young people;

- to improve the professional preparation of teachers and to encourage them, in the context of changing needs and tasks, to take an even more active and responsive part in strengthening the links between the school and adult life;

- to adopt positive educational measures which contribute to the achievement of equality between girls and boys, women and men;

- to adopt positive measures to enable migrant workers and their children to profit more fully from education and training opportunities, taking into account their special needs as appropriate;

- to adopt positive educational measures to promote equality for under-served groups such as the socially disadvantaged, immigrants and the handicapped;

- to ensure that any necessary procedures related to educational choice, assessment and certification, take place in such a way and at such stages as to allow each pupil to develop his or her full intellectual and personal potential;

- to help the young prepare more effectively for adult life and work, by working towards the best possible balance between general and vocationally-oriented education and encouraging the provision of opportunities for work experience during schooling;

- to stimulate the development of more "recurrent" educational opportunities for young people and adults to continue education at all levels after periods of work;

- to facilitate the transition of young people to adult life and, in particular, to strengthen the contribution of education to solving the problem of youth unemployment, in co-operation with other authorities and groups concerned, including employer and trade union organisations, by:

- endeavouring to give all young people an opportunity to obtain a usable vocational qualification
- expanding opportunities and providing appropriate means for unemployed young people to gain access to further education and/or specific training
- encouraging improvements in the structure of work;

That the pursuit of these aims calls for efficient use of the resources made available to the educational sector, for continued improvement in the functioning of educational services, and for maintaining education as one of the most important sectors in public budgets;

That the pursuit of these aims calls also for closer co-operation between all those involved in education – the authorities, teachers and parents and the students themselves – as well as employer and trade union organisations and other concerned groups in society, in a united effort to sustain a just, broad-based and dynamic education service, and to draw on its potential for building a creative society and prospering economy.

# THE NEW EDUCATIONAL ENVIRONMENT

by *Emile van Lennep*,  
*OECD's Secretary General*

The interdependence between education on the one hand and economic and social policies on the other, has never been more evident than at the present time. There is no doubt about the extent to which the changing economic, social and demographic environment is having a major impact on educational policy.

Two aspects of the interface between education and this changing environment deserve particular attention:

- the prospect of a slower rise in educational expenditures, and,
- the implications for education of the prevailing high levels of unemployment among the young.

The dramatic expansion of educational opportunities has been one of the remarkable achievements of our societies in the last two decades. From about 1960 until the early Seventies, national expenditures on education grew on average 1.4 times more rapidly than GDP. Universal primary and secondary education have been largely achieved. The number of students receiving higher education doubled. And upper secondary school expanded very rapidly in many countries, partly to feed the fast growth of the universities and new forms of higher education, and partly to satisfy the needs of the economy for a wide range of sub-professional skills.

But a turning point appears to have been reached. Many observers have noted that the educational bubble has burst. I dispute both the pessimism and the nostalgia which characterise this judgment. Education, by its very nature, is a long-term investment by society and by individuals. It is therefore very important to disentangle the influence of passing events from more fundamental changes in society, and to avoid hasty changes in policy which may be damaging in the longer-term.

First, I believe that the slowing down in educational growth, after the hectic pace of expansion in the 1950s and 1960s, would have taken place regardless of the onset of the economic recession in 1973-75. It was indeed inevitable that there should be some reaction after the very rapid growth of the 1960s. The marginal benefits to society were bound to diminish as coverage became more universal and the supply of highly qualified entrants to the labour force increased. No doubt, the benefits to individuals were great and continue to be great, but this raises the question as to who should pay for such benefits. No-one questions, of course, the need for a publicly-financed basic education for everyone, but if the benefits of higher education accrue to a relatively small group in society it seems unreasonable for the public purse to carry the entire burden of an ever-lengthening process of education.

Second, the onset of the 1973-75 inflationary recession did, of course, sharpen the debate about the limits to education growth. The anti-inflationary stance of policies in OECD countries led governments to put the brakes on the rise of public expenditures and taxation in terms of GNP. Education, as one of the major components of public budgets, inevitably had to share the burden of restraint. And the taxpayer has become more vigilant about how much he pays, and what he pays for.

There are a number of lessons to be drawn from this situation. First, that the demographic slowdown in student numbers in many countries, while it creates transitional problems for teacher training, provides an opportunity for consolidation of earlier advances by improving the quality of basic education. Second, that there is an enhanced case for improved effectiveness and efficiency in education. And third, that new demands, for example for pre-primary, compensatory and recurrent education, should be carefully scrutinised against the background of current economic constraints and social preoccupations.

As to the problem of high levels of youth unemployment, it is sometimes argued that the blame for this lies with our educational systems, because young people are not being provided with the qualifications needed to get jobs. This is obviously nonsense insofar as, during the recent period of slow growth, there simply have not been enough job opportunities for new entrants to the labour force. But it is also very true that under present difficult circumstances it is a matter for particular concern if certain groups among the young find themselves at a disadvantage because of a lack of useable qualifications. And, over the longer run, it seems that part of the problem of structural unemployment reflects a mismatch between the supply and demand for particular skills in the labour market.

In the years of rapid growth and strong pressures in the labour market, industry snapped up the young as they left school and trained them at the work place. Now the picture has changed — and the present situation will probably continue for a number of years. The young do not so easily find a job where they can acquire skills. This is not, in itself, an argument for giving them *more* education; it is an argument for giving them the *right* education.

Of course the definition of what is the "right education" is precisely the dilemma we are facing. This is fundamentally a long-term rather than a short-term issue. Indeed, we must avoid the danger of distorting the general aims of education in reaction to cycles of high unemployment. It is the permanent responsibility of the public authorities to seek for a just equilibrium between education geared to the changing requirements of the labour market and education designed to serve the wider needs of the individual and society. In the years ahead, this reconciliation will need to take account of two major forces in the advanced, industrialised societies of the OECD.

First, OECD countries have entered a period of rapid structural adaptation to changes in demand, technology and the structure of the world economy. This involves increasing calls on the inventiveness and adaptability of the labour force and on provisions for acquiring new skills. It argues against a too narrowly vocational approach. It also strengthens the case for recurrent education, as promoted by the OECD over recent years, whereby education and training opportunities are distributed more evenly over the lifespan of the individual.

Second, given the context of continuing, if more moderate economic growth, the new social demands which emerged during the 1960s are likely to persist. Improvements in the quality of life

and in the working environment are, to some extent, the corollary of a more highly-educated population — as is participation in decision-making in economic and community affairs. And, while it now seems that the role of education in reducing economic and social inequalities may have been exaggerated, this does not mean that efforts to improve the educational opportunities of the disadvantaged should be abandoned.

\* \* \*

Thus, far from being faced by contraction or stagnation, education is moving into a challenging period of re-assessment and innovation. Expenditure will rise less rapidly. Educational needs may

have to be redefined so as to foster a more flexible pattern of education over the life cycle. Alternative organisational structures and institutional techniques will need to be developed, particularly for adult students. The teaching force will need to be retrained and redeployed. Management and control will need to be strengthened. None of this can be achieved without closer co-operation between the educational authorities and those who are responsible for the daily affairs of the school, and between the educational sector, the broader community and the world of work.

Education is not an isolated sector of policy but as a vital component of overall national policies, in dynamic interaction with other sectors, contributing to the development of the kind of society and economy we wish to see in the years ahead.



Ritt Bjerregaard



Kjølvs Egeland



Shirley Williams

*In the debate conducted in Denmark no evidence has ever been submitted to the effect that the quality of education is slipping. Children and young people today are taught things we never learned — and which we therefore couldn't do when we left school.*

*People who complain that youngsters leave school nowadays unable to read and write tend to forget that these young people come from sections of the population whose youngsters previously could get ahead in life with quite rudimentary proficiencies in these basic subjects and find employment in jobs where reading, writing and arithmetic were not so important — for example as farm labourers, and domestic help. We see proof of this in the fact that many adults, well up in years, now flock to evening classes in reading, writing and arithmetic when these are offered by adult education.*

Ritt Bjerregaard,  
Minister for Education, Denmark

*I particularly want to stress the need for strengthening the educational background of the*

*weaker groups in our societies — be it women, ordinary workers, people in outlying areas, minority groups, the handicapped etc. The challenge — and the obligation — is to build up all people's strength to fight — on their own premises — for a fully accepted equal status in society.*

Kjølvs Egeland, Minister of Education, Norway.

*The change in demography could be a great opportunity or a catastrophe. A great opportunity because it reduces the size of classes and gives us additional accommodation and additional teachers; but a worrying challenge because it requires those teachers to change their function to some extent. Possibly it could be as simple as saying that some primary teachers have to become secondary teachers and some university teachers will have to become teachers of adults rather than of students. That is the kind of change which I do not yet know whether a rather conservative profession is capable of making but I hope so.*

Shirley Williams,  
Secretary of State for Education and Science,  
United Kingdom

# UNEMPLOYMENT COMPENSATION :

## A COMPARISON OF SIX COUNTRIES

*Since unemployment now affects more than 18 million people in OECD countries, it has become increasingly important to know how the system of unemployment compensation is working. Six countries — Belgium, Canada, France, Germany, the United Kingdom and the United States — volunteered to submit reports on their systems to an OECD Working Party on Social Aspects of Income Transfer Policy and allowed the group to examine how they have been working in practice (1).*

Unemployment has increased from 6.2 million in 1973 to 10.6 million in 1978 (see table) in the six countries covered by OECD's study. As a result of this rise and increases in the coverage, duration and scale of benefits, public expenditure on unemployment compensation in the six countries has risen from \$8.4 billion in 1973 to \$27 billion in 1978.

Unemployment compensation schemes give rise to a number of important public policy issues which are of both current and longer-run interest.

### Adequacy of Benefits

#### ● Level

In all of the six countries examined, the ratio of benefits to workers' previous wages from employment (the replacement ratio) has risen over the past decade (2). The ratio varies from case to case depending on the unemployed person's previous wage and, in some countries where this is relevant, on his or her family circumstances, but typical compensation for an average adult worker in OECD countries would now be about a half to two-thirds of his former wage, and a low-wage worker would do better than this. With these levels of benefit, unemployment compensation provides effective income maintenance for the unemployed.

#### ● Coverage

Unemployment insurance is now compulsory in most countries. It does not apply to all occupations but usually covers most of those who risk becoming unemployed. In the United States about seven-tenths of the labour force is insured, but only

about half of the unemployed actually draw benefits. This is partly because in the United States, as in certain other countries, most schemes exclude people who quit their jobs "without good cause" as distinct from those who are laid off.

New entrants into the labour market and those who come back to it are not usually eligible for benefits because no contributions have been made on their behalf. The same is true for those who have not worked long enough to qualify for benefits. In some countries, these people have no income maintenance provision at all.

As to the unemployed who have exhausted their benefits, they too may find themselves in this situation especially if they have no dependents. The problem of providing for

these people can be expected to become more serious in a situation of slow recovery from a serious recession. Thus there is an urgent need to review the structure of benefits open to various categories of long-term unemployed in relation to other income maintenance schemes.

Generally speaking, a fall in earnings because of loss of overtime or shorter hours is not compensated by unemployment compensation funds, though in some cases organised "short-time" working is. The burden of work-sharing therefore is often borne directly by the individuals or firms concerned, though the state may participate in the cost when the schemes are started at government instigation.

#### ● Duration

In most countries, full unemployment benefits are paid for at least six months, and then people who exhaust their benefits move on to some other kind of welfare-support programme, often substantially smaller in benefit level and also subject to a means test. There are, of course, good reasons for having high initial benefits and lowering them later when the unemployed person has had a reasonable chance to look for another job. But the particular duration chosen must be based on the time it takes on average for a person to find a job.

In the United States, the duration of

1. *The report is to be published shortly under the title Unemployment Compensation and Related Employment Measures.*

2. *This is not a universal tendency in OECD countries. The ratio declined in six other countries according to the OECD study, Public Expenditure on Income Maintenance Programmes, OECD Studies in Revenue Allocation, Paris, July 1976.*

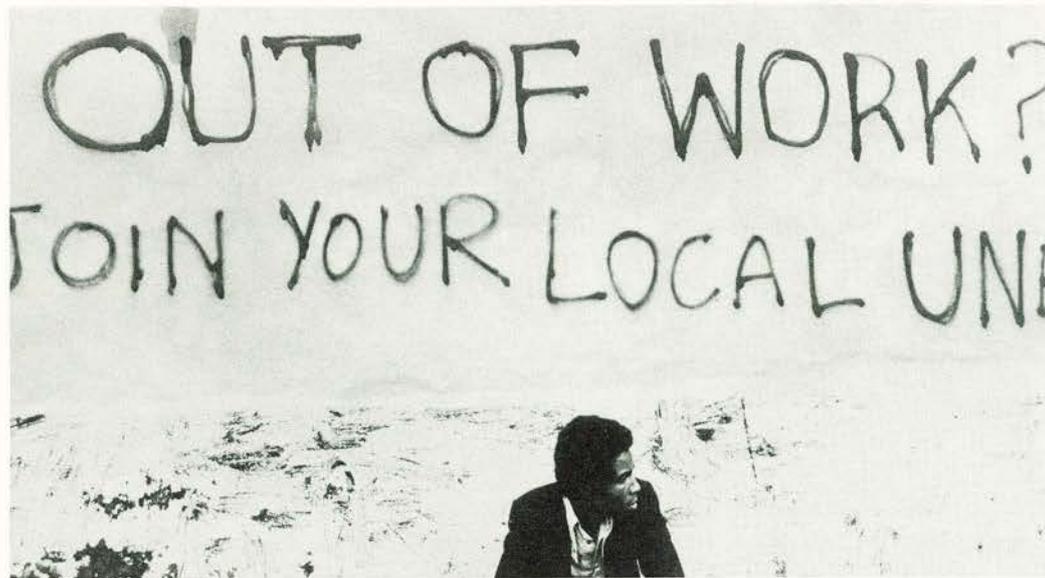
### UNEMPLOYMENT IN THE SIX COUNTRIES

(thousands)

	1965	1970	1973	1974	1975	1976	1977	1978 a)
Canada	280	495	520	521	697	736	862	930 b)
France	142	262	394	498	840	933	1,072	1,138 c)
Germany	147	149	274	583	1,074	1,060	1,030	1,013 b)
Sweden	44	59	98	80	67	66	75	92 d)
United Kingdom	339	602	611	600	929	1,270	1,378	1,387 b)
United States	3,366	4,088	4,305	5,076	7,830	7,288	6,856	6,057 b)
<b>Total</b>	<b>4,318</b>	<b>5,655</b>	<b>6,202</b>	<b>7,358</b>	<b>11,437</b>	<b>11,353</b>	<b>11,273</b>	<b>10,617</b>

a) *seasonally adjusted*    b) *average of first nine months*    c) *average of first eight months*  
d) *average of first two quarters*

Source: OECD Main Economic Indicators



benefits has varied with the overall level of unemployment from 26 to 65 weeks. The modifications have been partly the result of discretionary legislative action, but some are "triggered" automatically.

### Relation to Other Income Maintenance Programmes

Unemployment insurance is a form — and an important one — of income maintenance but, unlike most other programmes, the payments are generally not subject to a means test. They accrue to the recipient as a contractual right on the insurance principle. However, many unemployment insurance funds receive government subsidies, and there is now a complicated network of other benefits both in money and kind which the unemployed can receive on the basis of need. Because of the complexity of the systems there is some overlapping, and gaps occur between unemployment compensation and other programmes which leave some beneficiaries rather generously provided for and others in severe need. The dichotomy between insurance and welfare programmes is therefore not nearly as clear as it used to be, and as a result problems of equity and incentive have arisen.

In most countries, social security benefits are not taxable which seemed reasonable when income tax was confined to upper income groups but now leads to paradoxical results: the process of inflation and the growth of public expenditure have led to a gradual reduction in effective tax thresholds so that many people with low incomes (sometimes below the income maintenance level) now pay taxes.

Inequities and inefficiencies in effective tax burdens arise in many countries so that some people have a higher net income while unemployed than when they are working.

Unemployment compensation is paid to

individuals and was originally conceived as a programme for individual wage earners. However, higher activity rates have led to a situation in which the typical family may have more than one wage earner. It would therefore be useful to re-examine benefit structures in the light of how effective the systems are in responding to family as well as individual income-maintenance problems.

In some countries, the rules for retirement pensions, invalidity and sickness benefit have been modified to cover the income-maintenance problems of the long term unemployed; although this meets an immediate social need, it does pose longer-term difficulties because it excludes from the labour market people who may be fit and willing to work.

There is sometimes a gap in income-maintenance programmes for certain categories of the unemployed who are entitled neither to unemployment benefits nor to welfare programmes.

Because of these problems, OECD's Working Party "strongly" recommends improvements in the statistical monitoring of unemployment, so as to follow the hardship cases, as well as a review of the equity and rationale of existing structures of benefit under different types of income-maintenance schemes to which the unemployed may be entitled at different stages of their unemployment experience. Present structures were often fixed by rule of thumb, with *ad hoc* adjustments to deal with inflation, so that many of the benefit structures are probably in need of rationalisation.

### Methods of Financing

Unemployment compensation is financed in several different ways in OECD countries: out of general taxation (as in Australia), as part of a general social security levy, or on a quasi-insurance basis. In none of the countries with full insurance principles of

financing do contributions appear to be completely differentiated according to the risks involved, though the United States system tends in this direction to some extent since employers' contributions are determined by their past experience ("experience rating").

One final point: unemployment contributions (along with pensions and other social security levies) may amount to a tax on employment, and their incidence may be such as to discourage some employers from providing jobs.

### Effect on Work Incentives

Most unemployment compensation systems have checking devices which are normally effective in discouraging fraud and which deny benefits to inactive job seekers and job quitters. However, the existence of high levels of unemployment on a prolonged basis has placed some strains on the verification (job test) and employment-placement services on which the integrity of the system depends in the eyes of the general public. Validation procedures have come under some strain, but in most cases the work-test criteria seem reasonably robust, and abuse of the systems is not widespread. OECD's group however felt that placement and job-test facilities should be integrated, and in particular, that every effort should be made to expand the efficiency of the official job placement mechanism. Obviously benefits cannot be subject to rigorous job-search criteria in systems where public-placement agencies handle only part of labour turnover.

Quite apart from questions of checking eligibility and fraud, there is the question whether and to what extent higher levels of benefit may have induced unemployment by encouraging people to prolong the period of job search. The problem of "moral hazard" is present in all insurance operations, whether private and voluntary or public and compulsory, and the problem of work incentives is a general one for all types of social security payments; with unemployment compensation in fact, the problem may be less severe because the payments are of limited duration.

A recent collection of 10 country studies on this issue (3) has found evidence that, by lowering the cost to the unemployed person

3. See H. Grubel, ed., *The Effects of Unemployment Insurance on Unemployment*, Frazer Institute, Vancouver, 1978. See also M. Feldstein, *Lowering the Permanent Rate of Unemployment*, Joint Economic Committee, Washington, D.C., 1973, Z. Spindler and D. Maki, *The Effect of Unemployment Compensation on the Rate of Unemployment in Great Britain*, Oxford Economic Papers, December 1975, and D.S. Hamermesh, *Jobless Pay and the Economy*, Johns Hopkins, 1977.

of looking for work, unemployment benefits have raised the level of voluntary unemployment in seven of them. The United States study suggested that the presence of unemployment compensation raises the United States' unemployment rate by 0.7 per cent (mainly by increasing the duration of unemployment). Other countries in which a significant effect has been noted are Canada, Ireland and the United Kingdom. There is limited evidence of induced unemployment in France, New Zealand, and Belgium and no such evidence in Germany or Italy. Italian unemployment benefits are so low that they could not be expected to induce unemployment, but subsidies are provided for short-time working and this is a major weapon to combat unemployment in Italy. The study on Ireland suggests that benefits tend to increase unemployment not only through the normal inducement effect, but also by their impact in reducing out-migration and the fact that the imposition of a standard contribution discourages employers from hiring low-paid, unskilled workers.

OECD's Working Party did not feel that unemployment benefits are generally excessive, in spite of the evidence that, at their present level, they may have induced a small but not negligible amount of additional unemployment in some countries. These benefits are intended to raise social welfare, and the fact that people prolong their job search by an extra week or two may well improve the match between their skills and job opportunities and reduce labour turnover in the longer run. All members of the Working Party agreed that a narrow view should not be taken and that adequate time for job search is in the social interest. Nevertheless there is concern in some countries that induced unemployment may be becoming more significant, and it is clearly desirable that research be carried further.

### Relation to Other Employment Policy Instruments

The trade-offs between different instruments of manpower and employment policy are not always very coherent or explicit, though there is increasing emphasis on the need for a strategic overview now that the burden on such policies has increased so much. There are many different options for use of the funds — each of which has its own costs and benefits. Because of the complexity of the policy objectives involved, the Working Party reached no conclusions on the right balance between selective and aggregative measures, but did consider that great weight should be given to social considerations in employment policy and hence strong emphasis on provision of job opportunities to everyone who wants a job.

# DATA NETWORKS NEW INFORMATION IN

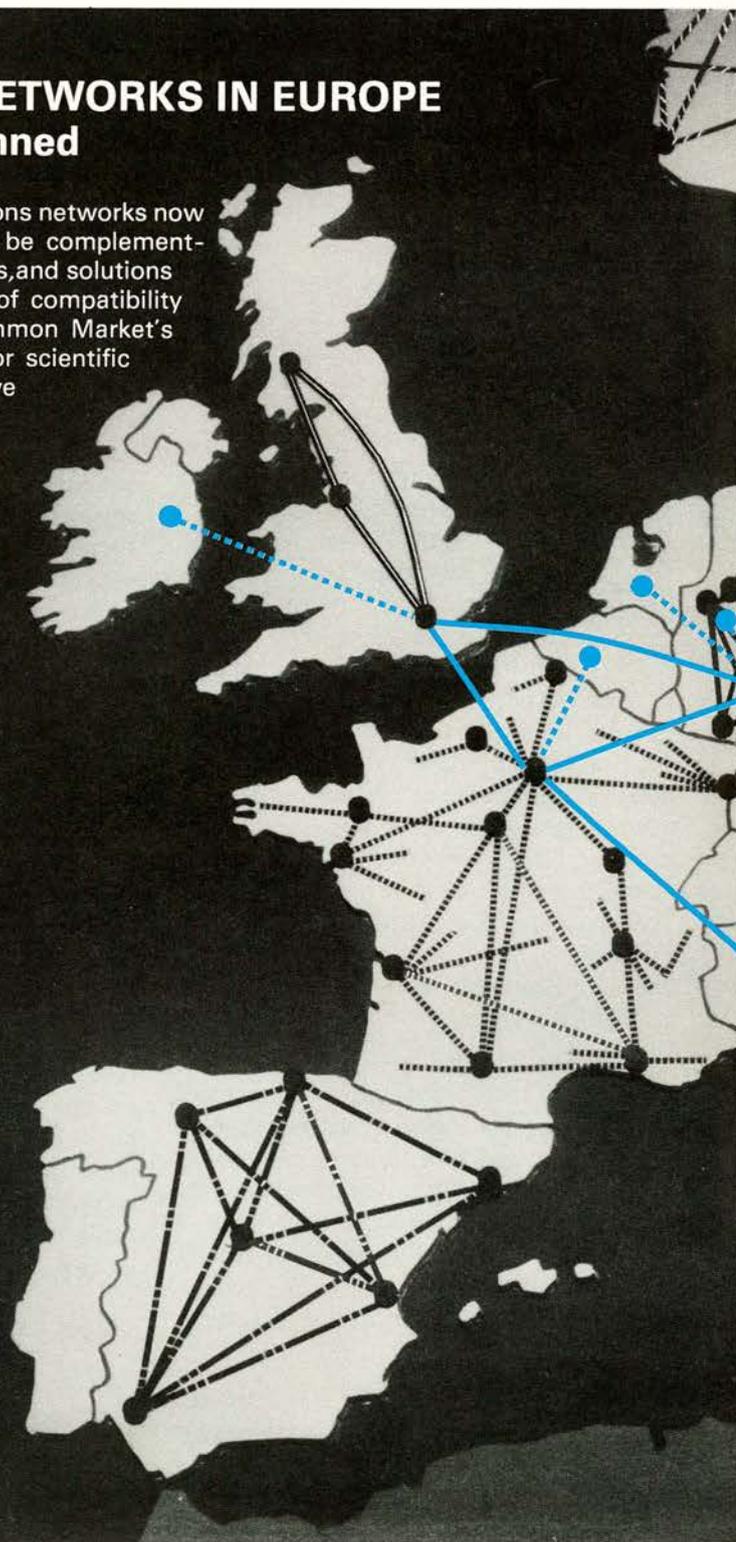
Head of OECD's Informa

## PUBLIC DATA NETWORKS IN EUROPE Present and Planned

National data communications networks now being built or planned will be complemented by international networks, and solutions to the technical problems of compatibility are being sought. The Common Market's Euronet, first to be used for scientific and technical data, will have rates that are independent of distance.

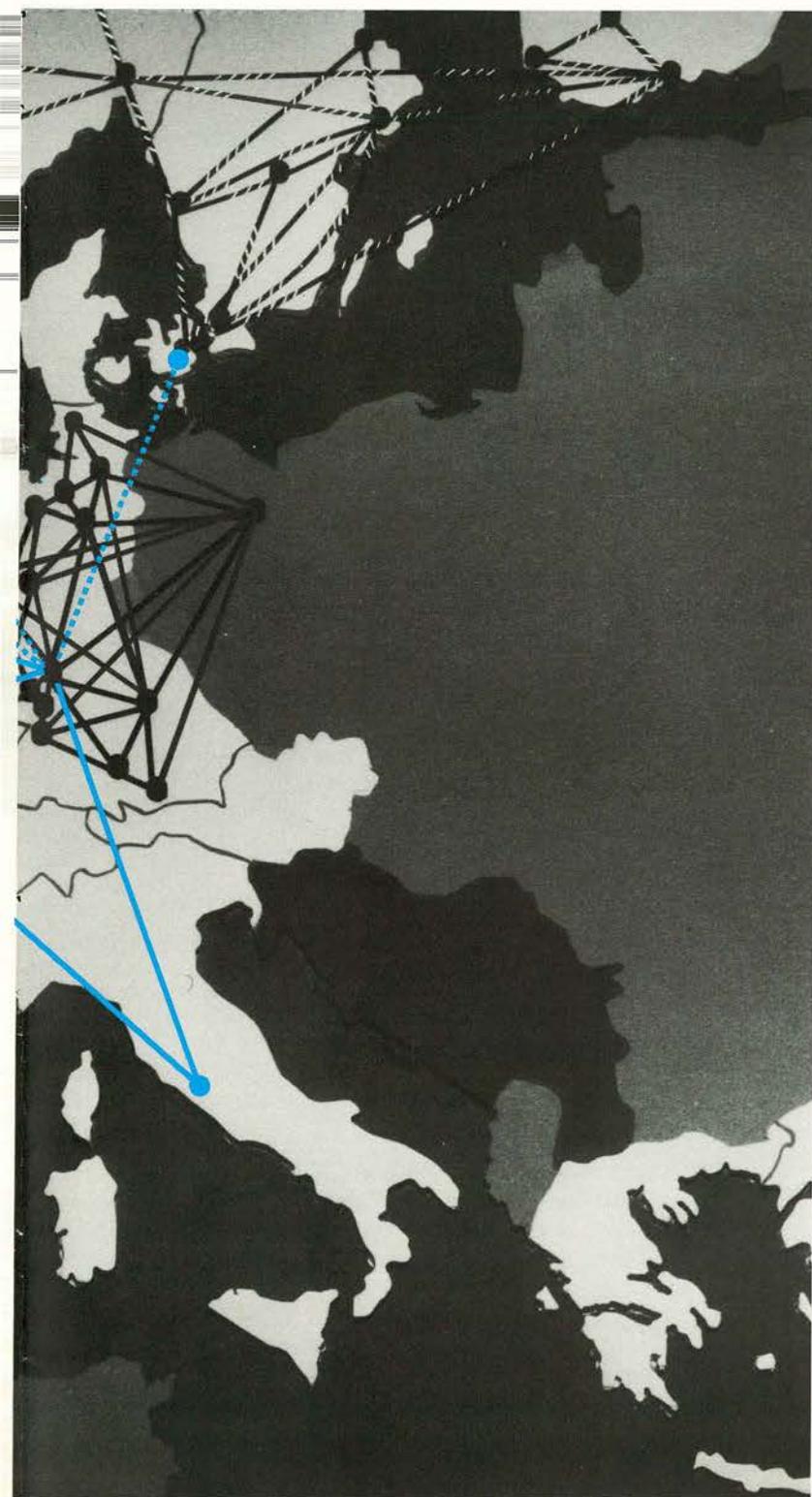
*Source: The Usage of International Data Networks, a report prepared for OECD by Logica Limited in London to be published shortly.*

- ..... Transpac
- — — RETD
- IDN
- ==== EPSS
- //// Nordic Data Network
- Euronet
- ..... Euronet



# NETWORKS : FRASTRUCTURE

by Hans Peter Gassmann,  
Director, Computer and Communications Policy Unit



**D**espite the sluggishness of the current economic situation in most OECD countries, the data communications service industry is enjoying growth rates of some 15-20 per cent per year. New data communications services are expanding at national level; they are beginning to span continents and will grow to international dimensions in the very near future. This will have great economic, social and legal consequences and will require sustained efforts for international cooperation.

In one sense of course we are already drowning in a flood of information and cannot afford to add further to the chaos. What we need are new means of bringing order into this information — to obtain needed information at the right time. The raw material for the “information workers” needs to be shaped, prepared for easy access so that those who process information need not spend much time in searching for it. This is where computers and communications technologies come in. They are the basis for new information infrastructures which will permit the transition from the present, essentially *static*, information as represented in books, journals and printed matter to *dynamic* information in electronic form.

Technology is responding to the need to provide faster, cheaper, easier data processing: the innovation rate in both the computer and communications field has been spectacular over the past two decades. At one extreme, the micro-processor is drastically reducing the costs and the size of computing systems. At the other, telecommunications satellites will provide the potential for cost-efficient, high-volume transmissions over long distances.

Most computer systems are becoming “inter-active”; that is they have immediate access to each other: many terminals are used to gain access to central memories. Increasingly now, organisations must have access to memories outside their own computer system. National and international information networks are emerging, with users having remote access to “host” computers.

## Recent Technical Developments

In the last two years, considerable progress has been made in implementing and planning data networks.

- A variety of privately-owned data networks have come into use and are offering their services in the United States and Canada, in Japan and many Western European countries. Many large multinational firms already operate international data networks for their own internal use. SWIFT, a private banking network in which more than 500 European and American banks now participate, started operations at the end of 1977.
- In Europe, national post, telephone and telegraph (PTT) administrations are planning public data networks, for example, a French system (Transpac) which is to become operational at the end of 1978. In Scandinavia, the Nordic Public Data Network will be in operation by 1980. In Spain, the national data network already has more than 6,000 terminals in operation. Euronet, set up by the European Communities, to be run by a consortium of European PTTs, will start operation in 1979, with applications limited at first to exchange and retrieval of scientific and technical information but to be expanded soon to take on other data traffic as well.
- In the United States, Satellite Business Systems, an IBM joint venture with Comsat and Aetna Life Insurance Company, is actively implementing its plans to become operational in 1981.
- In Japan, Nippon Telephone Telegraph Public Corporation (NTT) which provides domestic telecommunications is planning to start shortly the operation of a national public data network; KDD, the Japanese international carrier, plans to get its VENUS system operational by 1979. In Higashi-Ikoma, a city not far from Kyoto, an interesting large-scale trial experiment using computers, fibre-

The processing and communication of information is undergoing a technological revolution which cannot fail to have profound implications for people in their daily lives and employment and for the operations of industry, government and other services. OECD has set up an Information, Computer and Communications Working Party within its science and technology programme to monitor the technology and its economic and social implications. The Working Party is at present focussing on five problems:

- *Transborder data flows and the protection of privacy. Guidelines are being drawn up on the treatment of personal data. Problems involving the protection of other kinds of data will also be examined (1).*
- *Data communications network development including questions of regulation tariffs, access rules and facility planning*
- *Economic analysis of information activities and the effects of microelectronics on productivity and employment*
- *The administrative structures adopted by national governments to deal with information and communications problems and the role of other international organisations*
- *Strategies to encourage use by medium and small enterprises of new computer-based communications technologies*
- *Transfer of information to developing countries.*

(1) "Transborder Data Flows and the Protection of Privacy" describing a seminar on this subject held in Vienna will be published shortly.

optics transmission and terminals in the home is already functioning, exploiting the technique of large-band communications.

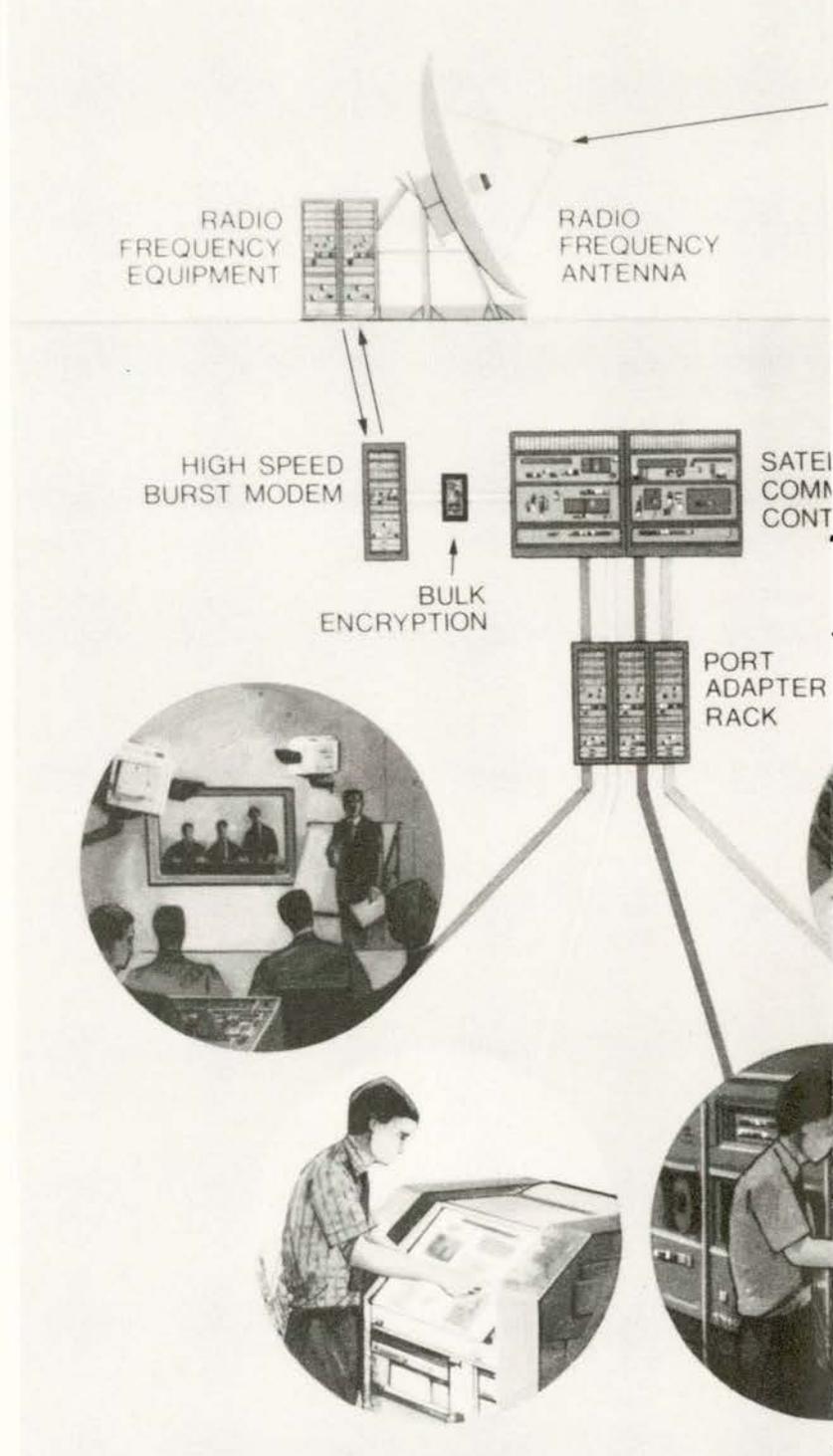
Most of these data networks are at a national level. Truly international *public* data networks do not yet exist, but *private* international data networks open to subscribers do: the SWIFT banking system, SITA (an airline communication system used by more than 200 airlines) as well as the networks of various international commercial service bureaus (Telenet, Tymnet, Cybernet, Marc III of General Electric and others).

For applications which do not require very rapid access, or error-free transmission, systems using ordinary telephone lines are quite adequate: one enormous advantage is that they already exist. So do television sets. Thus efforts are being made to link modified TV sets as cheap terminals with computerised data banks or data bases via the existing telephone infrastructure. Pilot schemes — not yet implemented commercially but planned for a year or so from now — exist in Europe (e.g. Prestel in the United Kingdom and the Antiope/Titan system in France as well as systems in Canada and Japan).

Thus the transmission and processing of data will soon have truly global dimensions: satellites will increasingly be used to provide access to users, and link-up facilities will be available virtually anywhere in the satellite's range even in remote locations without the need to wait for special telecommunication lines to be installed. These networks will make possible instant access to all kinds of data bases located in host computers, both public and private, all over the world. With such two-way information systems, mankind's common memory and information processing abilities will vastly increase.

### Economic and Social Effects of the New Technologies

This increased access to vast pools of knowledge is the positive side of the new technological developments. On the negative side,



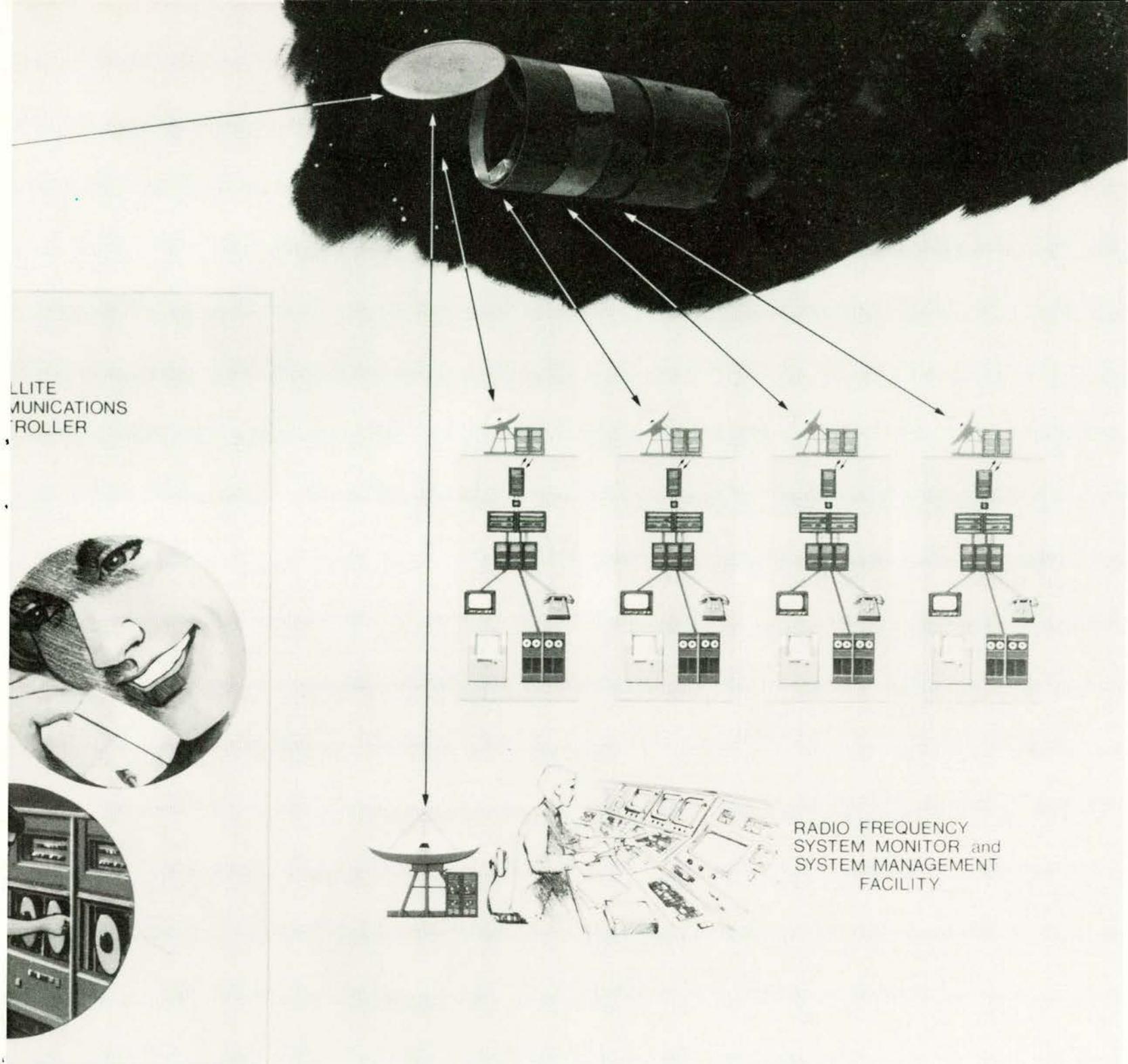
The use of satellites will permit transmission of voice, image and data in Systems (owned jointly by IBM, Comsat and Aetna Life Insurance Co) will permit teleconferencing: conferees will see and hear

there are fears that computers — and especially microprocessors — are job-killers, that they will invade man's privacy, and generally increase the vulnerability of society.

In the three elements of computer/communications systems — classical electronic data processing, computer networks and microprocessors — it is clearly the latter two that will bring about the major economic and social changes in the 1980s.

#### ● Computer networks

The computer/communications network like the economic infrastructures that preceded it — railways, postal systems, etc. — will provide jobs in the creation of new systems as well as in their operation and maintenance, which in many cases will require very complex software. It will provide the distribution channels for the



RADIO FREQUENCY SYSTEM MONITOR and SYSTEM MANAGEMENT FACILITY

the same network at the rate of millions of bits per second. The above system, planned for early 1981 by the United States-based Satellite Business, is in geostationary orbit above the continental U.S. The system is primarily designed for business and governments and will, among other things, be able to transmit instantaneously the documents they need thus reducing travel requirements.

national and international "data trade" and give impetus to a new class of businessmen, the "information entrepreneurs". Many of the information products marketed and sold by these entrepreneurs will have a very short life and rapidly become obsolete; therefore, frequent up-dating of the relevant data base will be necessary, and this process is labour intensive. New professions will arise — information collectors, processors and distributors. New jobs will also become necessary on the user side — statisticians, economists, econometrists, whose function it is to interpret and adapt the data.

● **Microprocessing**

Another change will arise from the need for mass production and mass application of microprocessors. Because of their efficient, automated production, they are becoming very inexpen-

sive, and will therefore be applied to new uses. For a small sum, powerful logic will become available to do many of the things so far done by human beings.

There are distinct fears in several European countries that the widespread use of microprocessors may make more and more workers redundant. The discussion recalls the concern about automation in the 1950s. While 20 years ago most of the automation affected blue-collar work, this time it is becoming evident that white-collar workers may be affected as well, especially as office work is automated. The recently published French report on "Informatisation of Society" (1) for example states that, in both

1. L'Informatisation de la Société, Simon Nora and Alain Minc. La Documentation Française. It will shortly be available in English.

banking and insurance 30 per cent of the white-collar jobs may have been rationalised over the last five years. This does not mean that 30 per cent of the labour force has been dismissed, but that the same labour force has been able to handle the increase of business. The implication is that job opportunities, especially for young people, may have greatly diminished. And the French findings relate to the past; they do not yet include the effects of the microprocessor.

In the spring of this year in the Federal Republic of Germany, a country known for the rarity of its labour disputes, there were severe strikes in the printing and metal-working industries because of trade union fear that the "electronics automation" could eliminate jobs or downgrade workers' skills. This, of course, is especially worrying at a moment of relatively high unemployment.

On the other hand, in the United States, the impact of electronic automation on jobs does not seem to be a major worry. "Chips are like electricity", one U.S. authority has said: "There are relatively few jobs making them, but there are a lot of jobs applying them". It remains to be seen whether this optimistic view or the fears voiced in Europe will prove to be the more correct.

In any case the skills and expertise required to find new applications for microprocessors, to invent and sell the required software and to provide the operating and maintenance services for these devices, are not as yet widespread. Thus adapting to electronics automation will mean a major, perhaps unprecedented, challenge for retraining and education. Responsible decision-makers in private industry, trade unions and governments should start concerted action *now* to adapt the social organisation of the economy to these technological changes.

It is quite possible that electronics automation will raise labour productivity so much that new agreements between management and labour may be needed to shorten working hours, extend holidays and increase the time earmarked for training and education.

In view of the sharp reduction of births which is taking place in developed countries, one might say that electronics automation is arriving 20 years too soon: if the rate of innovation in electronics technology could be slowed down until fewer young people enter the workforce, perhaps the problems of technological unemployment could be avoided. Unfortunately, the forces of technological change, intensified by international competition and trade, have become such that we are no longer masters of them. The only course open to us is to adapt to the new situations created. Only if society were to develop a consensus on the matter could the very real opportunities to reduce routine and enhance creative work be fully exploited.

### Protection of Privacy and Transborder Data Flows

Hundred of thousands of computer systems have been installed in OECD countries over the past 15 years. There has also been growing public concern about the data stored in these computers, especially data on people, and about the ease and speed with which such information can be processed thanks to modern computer and telecommunications technology. Concern has been expressed in various terms: in Anglo-Saxon countries the prevailing notion is "the need to protect people's privacy" whereas in Scandinavia and German-speaking countries it is "data protection" and in France "data processing and individual freedom". However expressed, a nearly universal fear has persuaded many governments that special legislation is required to regulate the use of computerised data.



Above: By mid-1979 residents of London, Birmingham, Manchester and Edinburgh will be able to subscribe to a new service called Prestel or Viewdata. Using a specially equipped T.V. set as a receiver and a simple telephone line, a subscriber can have access in two seconds or so to any one of 250,000 "pages" stored in a computer in the telephone exchange. The "information provider" will be able to feed information into the computer from a "typewriter" located in his own office and thus can update the contents of the page as often as he wishes. Information available will include such items as the latest market quotations, sports scores, train and plane schedules, weather forecasts, lists of restaurants and the latest news headlines. Later on, the subscriber will be able to ask questions and talk back to the computer, and "intelligent terminals" — micro-computers with memories — will allow users to process the material at home or in the office. Similar systems will be installed in France (Titan) and Japan (Captains). Below: experimentation in Canada has produced sophisticated methods of visual presentation for such systems.



In 1970 a "Fair Credit Reporting Act" was passed in the United States to ensure that credit investigations would not harm an individual's ability to obtain credit and that his privacy would not be unduly encroached upon. In the same year, a law was adopted in the State of Hesse in Germany providing rules for the operation of government computers and granting the citizen the right to see what is on record about him.

In Europe, several countries have now passed privacy protection laws in connection with automated data: Sweden (1973), Germany (1976), France (1977), Norway (May 1978), Denmark (June 1978), and several more are to follow suit this year. In the United States a Federal Privacy Act was enacted in 1974, and

many of the American states have adopted their own privacy laws. In Canada a privacy act was passed in 1977.

There are considerable differences between the United States and Europe on this matter. In the latter, existing privacy protection laws cover private as well as public activities whereas in the United States and Canada, it is generally only the public sector which has so far been subjected to such legislation. Most European countries have instituted some government machinery to monitor the implementation of privacy protection laws, while in the United States there is no such agency.

Most privacy laws refer to physical persons only; but recent legislation in Norway and Denmark also cover some legal persons — associations, foundations and, in the case of Denmark, private corporations as well. Privacy legislation expected in Austria, Belgium, Italy and Switzerland may cover both physical and legal persons.

It is no sheer coincidence that these privacy laws are appearing in so many countries at a time when there is growing communication between computer systems. The reason for the public's growing apprehension about the erosion of the individual's privacy is the possibility of *linking* electronically various sources of personal information, thus increasing private and public institutions' control over a person's "information environment".

Privacy legislation is the first example of regulation of computer services, a field which so far has enjoyed almost complete freedom. Many private firms, especially multinationals, will need to become more familiar with the various national regulations which cannot fail to have an impact on their business. Since most of the regulations are national, while the personal data flows are international, concern has been voiced about the exchange of data between countries — the so-called "transborder data flows". Attempts are at present being made by several international organisations, especially the Council of Europe and the OECD, to reach agreement on an international convention and guidelines to harmonise the various privacy laws and to establish a network of governments for mutual aid in effectively protecting the privacy of the citizen.

At present, the discussion on transborder data is focussed on personal data. Important as this aspect is from a human rights point of view, it is only one part of a broader picture. Other legal aspects which need attention are the proprietary rights of electronic data bases, modalities of access to data bases, and the need for new legal ground rules for the emerging international data networks.

## Challenges for International Cooperation

It is obvious that a purely national approach to these problems will not do. No country, even the largest, can adopt domestic policies in the computer/communications field without taking the international scene into account. On which areas should such international cooperation focus?

### ● *A New International Legal "Regime"*

First some new international rules or guidelines for the establishment of transnational data networks may become necessary to facilitate their harmonious development. At present, data networks are set up in a somewhat *ad hoc* manner, and a variety of modes of operation compete with each other. Basically, the question is whether the new information transport infrastructures will be operated in an *ad hoc* way like for example sea transport where there are numerous exceptions to internationally agreed rules ("data havens" have been compared to flags of convenience) and where a major disaster such as the recent oil spill of the Amoco Cadiz in France is apparently needed to get any

of the rules changed, or whether it will be a truly modern infrastructure like the air transport system with precise international safety rules adhered to by all participants. In the field of new data communications services, an international regime of well-defined, preventive rules for the feeding, operation and use of international data networks should be set up in order to guarantee maximum safety of the system, not only from a physical point of view but also from the point of view of information quality.

### ● *Freedom and Equality of Access*

From the outset, a distinction must be made between data of a purely commercial character sent to (or received from) private organisations and data offered by data banks on a public subscriber basis. For the former, as with normal mail today, strict confidentiality and exclusive rights to the data must be guaranteed. The latter, on the other hand, will be the modern repositories of human knowledge in dynamic form — a global pool of electronically accessible information. This should be an *open system* accessible to large and small firms, rich and poor individuals and countries alike. A system to which only financially powerful users have access must be avoided or international information networks, instead of contributing to the transparency of the world economic system, will make it more opaque and will increase existing disparities between the "information rich" and the "information poor". Therefore, the principle of freedom of information should, insofar as economically feasible, apply to the new international data banks.

### ● *Protection of Data Bases*

However, equal access cannot mean completely free, no-cost access since data bases on computerised systems are expensive to run and maintain. If no financial incentive is provided to the "information entrepreneurs", they will not take the risk involved. Therefore, the same principles which apply to collection, storing and dissemination of information in the form of paper should also apply to its electronic form. This means a system in which the proprietary rights of data bases and software programmes are assured.

In practice, it may be very difficult to strike the right balance between the principle of equal access and the interests of the data "vendors", and only experience will show where a good equilibrium can be found. But it is important to draw attention to these conflicting aspects at the outset when new international information infrastructures are being conceived.

### ● *Protection of Personal Data*

It is also necessary to harmonise the effects of laws protecting the information environment of the citizen on an international basis. For this purpose, international guidelines or conventions are needed to ensure that certain constraints are respected and thus that personal information can freely circulate between countries. Should international agreements on such constraints not be reached, there may be a danger that certain countries will erect new barriers to the import and export of personal information for the sake of protecting the privacy of their citizens.

### ● *Economically Attractive Rates*

Another issue of prime importance is what rates telecommunications administrations or carriers should charge for their use. Again, the interests of the users have to be balanced against those of the carrier since new data communications infrastructures are expensive to build up and maintain. In theory there are two possible development strategies. The first, the lower risk path, is to charge high rates during the first years of operation in order to ensure a relatively rapid amortisation of the sums invested and to offer lower rates later on. This strategy of course

gives the financially powerful users an early start, while the others must wait.

Another strategy would be to institute relatively attractive rates from the start. The disadvantage of requiring a longer period of amortisation must be weighed against the advantage of building up volume traffic fairly rapidly. Since small users would be able to use the data networks from the start under this second alternative, it would probably serve the general interest better.

There are at present great variations in rates for the same service in different countries. This results in a distortion of the conditions of use of data networks and may even prevent a rapid build-up of a large user community in countries with a high rate structure.

To avoid such disparities, it would be important for telecommunications administrations and carriers to agree on two major courses of action:

- to harmonise their rates internationally as much as possible,
- to follow a low rate strategy when initiating new data services.

These two conditions would appear to be of paramount importance for a balanced and rapid build-up of international data communications services.

### ● *Standardisation*

It is evident that the development of international data networks requires a substantial effort of standardisation. In the data communications field, the interface standards have been developed by the Conférence Consultative Internationale des Télégraphes et Téléphones (CCITT) and rather rapidly, considering the complexities of working in the international field; they represent a good example of well functioning international cooperation. This achievement was probably possible only because of the long-standing tradition of international standardisation among telecommunications carriers.

One may hope that the same will happen in the field of "view-data" services. It would be rather unfortunate, not only for users, but also for the industries concerned, to follow the example set by colour television where different standards — the United States standard, the German PAL, the French SECAM — coexist. If one takes the optimistic view that those slow-speed, computerised data systems based on television sets will be used by millions of peoples in the 1980s, then it is urgent to call now for a major international standardisation effort in order to arrive at a homogeneous technical situation before these systems start operation.

In view of the mass market for data communications which can be anticipated, it is important to consider standardisation not only in technical terms but also in terms of payment. For if many users have access to data bases situated in several countries and use such slow-speed terminals as modified colour television sets, billing for this access becomes crucial to their financial viability since they would probably specialise in the provision of fresh but rapidly out-of-date information (e.g. statistics, financial analysis of firms stock-market quotations etc.). Such information is rather expensive to diffuse unless the cost can be recovered quickly from a large group of users.

Another problem has to do with data security, and especially data "encryption" or coding. In the United States there is at present a movement to create national standards for data encryption, since there is rapidly growing concern over computer fraud. With the emergence of international data networks, encryption may soon need international standards as well to ensure that the data are safe on international routes.

### ● *Data Interdependence*

The development of computer/communications systems may

have significant effects on the "information" or "data trade" in the world. Although the main markets for data communications are likely to develop mainly within and among the Western developed countries, at least until the mid-1980s, it is not unlikely that there will be a fast increase in data communications to and from the developing countries, focussing on the use of telecommunications satellites. Such a trend, however, presupposes that developing countries will improve their telecommunications systems. But what is the interest for developing countries of giving higher priority to the building up of a modern telecommunications system than to, say, their heavy industry?

So far most Third World countries have been following the development pattern of the First World (Western) or the Second World (Eastern) countries, that is to say economic development based on increasing energy consumption. Perhaps that is the inevitable path; but, considering the limitations on world energy resources, one might ask whether it is the right way to go in the future, or whether it would not be possible to choose a development strategy which is less energy-dependent.

Operation of telecommunications systems does not require much energy. Many studies have indicated that certain modern forms of telecommunication, such as teleconferencing, tele-education and electronic mail, have the potential to substitute for energy-consuming physical transport. And it is clear that telecommunications systems certainly raise productivity and thus contribute to economic growth.

Without exploring this question in depth, two points may be made:

- It seems that some modern forms of telecommunication have the potential for saving energy while contributing to economic growth.
- No country so far has given early emphasis to investment in civil telecommunication systems in its economic development as a matter of top priority.

Were some Third World countries to give priority to such investments, and build up telecommunications systems comparable to those in developed countries during the 1980s, they would have a data communications capability that could be used both domestically and internationally. Advantages would obviously accrue to these countries if access to the data bases of the developed nations were completely open or even free. In the scientific and technical field, as well as in data support for their exports there might be significant advantages; perhaps also for their education systems, although this is less evident.

There is a danger however that, if the developing countries create data networks and then have access only to data bases of developed countries which is largely irrelevant to their problems, scarce computing and communications resources will be wasted. To avoid such waste, it would seem essential that data bases be created with information which is particularly relevant to their needs. Probably such data bases need to be set up, operated and distributed by developing countries themselves. The result would be a data processing system decentralised throughout the world; data bases or host computers in developed countries containing the latest state-of-the-art information would co-exist with systems carrying information of special interest to developing countries and located there.

These problems need to be considered on a worldwide scale as of today. At present, there is a growing awareness that the relations between developing and developed countries are interdependent. This notion must also extend to the field of information. It is to be hoped that a well-balanced "data partnership" will evolve during the years to come.

# POPULATION AND POVERTY

by Margaret Wolfson,  
OECD Development Centre (1)

When the World Population Conference came to a close on 31st August 1974, it seemed to many of the four thousand or so delegates, observers and journalists who had filled Bucharest for that turbulent week, that a whole generation of thinking about population policy had come to a close with it. Among much of the donor community, in particular, there was a feeling that the conference had resulted in a public repudiation of family planning as the main solution of population problems, and that henceforward the attitude of the Third World towards population problems would be dominated by the slogan "development is the best contraceptive".

## Bucharest and After: Initial Reactions

The "message" of Bucharest was primarily a message to donors. Because of its own preoccupation with the dangers of continuing rapid population growth, the donor community, in the period before Bucharest, tended to assume that developing countries would naturally see the "population problem" in the same light. It is one of the important contributions of Bucharest, and in particular of the World Population Plan of Action with its remarkably comprehensive range of topics, that it is now beginning to be understood that individual developing countries have different perceptions of their respective "population problems". At the same time, Bucharest represented a public and unequivocal repudiation of family planning as the principal solution to the problem of population growth. For much of the donor community, the shock was the greater because even many governments with well-established national population policies and family planning programmes joined the chorus of rejection.

Among the developing countries, few seemed to consider the Bucharest Conference or the World Population Plan of Action as a sudden revelation or even as a source of particularly new ideas. Nonetheless, there is no doubt that the conference as an "event" gave a new importance and political sanction to population issues. Apart, however, from the *volte face* of Brazil, a pronounced champion of pronatalist population policies which announced at Bucharest, that it accepted the human right of the individual to determine the size and spacing of his family, few other countries have since come forward as recruits to the cause of limiting population growth. Nonetheless, some countries not concerned about overall population size are now showing interest in introducing family planning as a health measure.

In those countries which already had policies to control population growth, Bucharest, contrary to what might have been expected at the time, has been followed by a general strengthening of official commitment. The governments of the twelve countries reviewed in the OECD study have increased budgetary allocations for population activities, set new and more rigorous demographic targets as part of the national development plan and announced new programmes of family planning together with a variety of other measures intended to help realise these targets (2).

Among the donor community, although in a few cases the immediate reaction was a reaffirmation of family planning and the direct approach, most agencies have since come to modify their initial stance

to a greater or lesser degree. There has been a genuine desire to adapt to changing situations and needs, and most of the principal donors of population assistance have undertaken major reappraisals of requirements and how their programmes should be adjusted to meet them.

## Changes in Approach

In adopting national policies to limit the rate of population increase, the prime consideration of developing country governments was to keep demographic growth commensurate with the country's economic possibilities.

Thus for example President Habib Bourguiba of Tunisia, long one of the most consistent, determined and outspoken heads of state on the necessity for limiting population growth, had no hesitation in declaring publicly: "In establishing 'family planning' our prime concern was to achieve a balance between population increase and the growth of the national income: in order that they should both proceed at the same rate, it was necessary to *plan births* as well as production."

Gradually, however, and certainly the process began before Bucharest, there has been a change in countries' perception of the *nature* of the population problem.

As development philosophy has moved away from the earlier confidence in economic growth and the expectation of a "trickle-down effect", thinking about population as a factor in the development process has been evolving also. In particular, since social progress has come to be considered as desirable as economic growth — if indeed not more so — it was natural that the "population problem" should cease to be thought of as primarily a matter of numbers.

### ● *Family planning, human rights and family welfare*

A noticeable development since Bucharest has been the increasing emphasis on the implications of high fertility at the "micro" level — for the individual and the family. There seems to be a growing recognition among both developing countries and aid agencies that "development" should be "for people" and in particular that "population" is "about people". The result is that governments still want to spread the practice of family planning, but there is now a new and subtle change in the motivation.

Developing country governments today are increasingly taking the view that family planning is necessary not only in the interests of controlling national population growth but also to enable the individual to exercise his right of choice as to the number and timing of his children.

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1. This article is based on a study prepared at the request of OECD's Development Assistance Committee (DAC) and submitted to a recent conference, sponsored by OECD's Development Centre in collaboration with the DAC and the World Bank. The study will be published shortly under the title *Changing Approaches to Population Problems*.

2. Only two of the countries reviewed would seem to have had some initial reluctance about setting official targets for population limitation — Kenya and Mexico.

# 1. POPULATION DATA FOR 12 COUNTRIES

	Asia				Middle East		Latin America			Africa		
	India	South Korea	Philippines	Thailand	Egypt	Tunisia	Bolivia	Brazil	Mexico	Kenya	Tanzania	Zaire
Total population (million)	613.2	34.6	44.6	42.1	38.2	5.7	4.6	112.8	59.2	13.2	15.4	24.5
Population under age 20 (per cent)	52.5	50.0	56.3	56.8	51.2	56.0	52.1	52.2	56.8	56.8	57.1	53.5
Population density (per square km)	187	351	148	82	37	35	4.23	12.5	30	23	16	10
Rate of population growth (per cent)	2.48	1.7	3.01	3.23	2.57	2.65	2.10	2.7	3.34	3.38	3.13	2.65
Crude birth rate (per thousand)	38.7	24.3	41.2	41.6	38.0	35.0	43.7	33.0	41.7	48.0	49.3	44.9
Crude death rate (per thousand)	13.9	6.6	9.1	9.3	11.4	8.5	17.9	10.0	7.6	14.3	18.0	18.5
Life expectancy (years at birth)	52.1	68.0	60.7	60.3	54.9	56.6	46.7	61.0	65.5	52.5	47.0	46.0
Per capita national income in 1975 (\$)	136	560	325	318	245	800	299	729	632	209	162 a)	124
Literacy rate (per cent)	29	91	87	82	43.5	55	41	65.9	76	40	63	15

a) *Tanganyika only.*

Source : *United Nations Fund for Population Activities Inventory of Population Projects 1975-76, United Nations Statistical Yearbook 1976, World Bank Comparative Education Indicators and national sources – Latest available figures.*

If the human rights aspect of family planning is perhaps an abstraction, it leads straight to another that is much more concrete, namely the *health and welfare of the family*. There is a growing belief that parents should have the right to decide the size of their family in the light of their own possibilities of *caring* for their children and of giving them a decent start in life. The idea of human rights thus imperceptibly shades into that of *family welfare*.

A concern for “family welfare” has been the reason given for the introduction of official family planning programmes by governments whose policy as regards overall population growth was either pro-natalist (Bolivia) or largely indifferent (Tanzania and Zaire). It is now also the orientation given to population programmes by governments concerned to limit population growth. Thus in Tunisia the official family planning programme is now called the Family Welfare Programme. Kenya also has a Family Welfare Programme, covering both the family planning programme and a health development plan. In India, significantly, one of the first acts of the new Government that took over after the previous one had been defeated at the polls – in part because of popular resistance to the official family planning campaign – was to change the name of the Ministry of Health and Family Planning to Ministry of Health and Family Welfare.

Unavoidably, the question arises as to what extent these changes of nomenclature indicate a genuine change of approach, or are merely “packaging”. There is probably an element of both. The presentational advantage of promoting family planning in the welfare context is undeniable. At the same time, slogans such as that of the Planned Parenthood Federation of Korea’s “stop at two and bring them up well” or the call of the Mexican Government for “responsible parenthood” neatly brings together the demographic considerations of the State and the concern of parents for their children.

One of the principal new developments in the period since Bucharest is governments’ acceptance of the implications of this message for social policy. A policy of family welfare, in effect, implies obligations not only on parents but also on the state. If couples are to

limit the number of their children so that they can exercise “responsible parenthood” i.e. “put the emphasis on caring for children and the ability to bring them up properly,” (3) it also requires that they should have effective possibilities for doing so.

The family welfare message, oriented, as it increasingly is, towards such considerations as the health of the mother and the child, the financial burden on the father, the possibilities for better nutrition, housing and education, needs to be backed by measures to make these conditions actually available. The concept of “family welfare” in fact, if carried to its logical conclusion, implies the satisfaction, not only of the need for family planning and better health, but for the whole range of what are now generally considered as “basic human needs”.

## ● *Tackling the determinants of fertility*

At the same time as they are promoting family planning, developing countries have broadened significantly the range of problems to which they feel the national population policy should be addressed. In those countries, in particular, where the gap between population growth and the absorptive capacity of the economy is growing ever wider, there is an increasing feeling that family planning alone is not enough and that it is necessary to tackle also the *causes* of fertility. From an initial concern with the effect of population on development, some countries are now becoming concerned with the effects of *development* on *population*, and thence with the necessity to influence those particular development factors that are thought to affect population most directly – not only nutrition, sanitation and health, but also education, the position of women, employment, social security, redistribution of income and, indeed, the possibility of aspiring to a better life.

This shift in the approach to population problems certainly predated Bucharest, but it has since been gaining considerably in strength. When the head of the Indian Delegation to Bucharest

3. *President Julius Nyerere of Tanzania in a speech in January 1967.*

declared that "our real enemy is poverty", he was not only making a political statement, he was describing India's population problem in terms of its fundamental causes as the Government then understood them. The experience of certain Indian States had already demonstrated the relevance to fertility patterns of factors such as the level of literacy, the position of women, nutrition and equality of income distribution (4), but to try to improve these conditions nationwide would inevitably be a lengthy and costly process. The Government accordingly made the decision that it could not after all wait for the "frontal attack on the citadels of poverty" that had been bravely promised in the Fifth Five-Year Plan, and must instead go out for direct and massive population "control".

A number of other countries, however, seem prepared to give the "percolation effect" a try — not in substitution for family planning but in support of it. Thus, in Egypt, for example, the main thrust of the attack has moved from sole reliance on the direct family-planning approach to the indirect one of socio-economic development. Population policy in the Philippines seems to be moving in the same direction. As a country where completed family size is one of the highest in the world, it was logical for the Philippines Government to move from activities designed to encourage people to have smaller families to trying to influence the factors that make them want large families.

In both Egypt and the Philippines, the intention is to try to change the *totality* of the presumed determinants of fertility, or at least a very large portion of them. Other countries generally take a less ambitious approach, preferring to limit their efforts to selected factors thought to be particularly relevant.

The factor that receives most attention is the obviously related one of health. The link between high fertility and high infant mortality has long been recognised. In any developing country where large parts of the population live in highly unsanitary conditions and are deprived of even elementary health care, the scourge of high infant mortality is both a recurring personal tragedy and an incentive to continued high fertility.

Gradually, therefore, governments with population programmes have come to see that family planning is unlikely to make much progress among poor communities unless it is associated with *maternal and child health care*. Since Bucharest, there has been a much more determined effort to link the two and to make both more available to the rural and urban poor.

Another factor which is receiving increased attention is the position of women. *Improvement in the status of women* in developing countries is seen as a "human right" and at the same time as a likely means of reducing fertility. Countries where the situation and life-style of women are as widely different as, for example, India, South Korea, Mexico and Tunisia, are all now actively seeking to give women enhanced social status. They hope thereby not only to redress the inherited results of century-old traditions of male superiority but to offer new possibilities of occupation and social prestige as alternatives to the customary early marriage and motherhood. India has passed legislation raising the minimum age of marriage for both men and women; the Republic of Korea (traditionally a very strongly male-dominated society) has passed laws giving women a new, independent status within the family and in regard to inheritance; Tunisia has modified its marriage laws, and other countries are making similar moves.

One activity whose relation to fertility is now widely accepted is the improvement of *nutrition*, especially for the "vulnerable" target groups, i.e. small children and nursing mothers. However, most of the projects undertaken to date have tended to be on a pilot scale — perhaps because of the daunting practical difficulties of distribution and storage and of the long-term problems involved in changing dietary habits and crop production patterns (5).

## ● *The consequences of high fertility*

A number of governments are beginning to include as part of the national population policy not only the determinants of high fertility but also the consequences. In many developing countries, the consequences of rapid population growth are now posing problems of more immediate urgency even than that of curbing the high birth rates that gave rise to them. The continuing rural exodus, caused by pressure of population on the land, has led to massive problems of mushrooming urban growth, unemployment and emigration of manpower. These are potentially explosive political problems, and governments naturally give them very high priority.

Three countries so far have firmly included these problems in their official definition of the scope of their national population policy. In Mexico, a constitutional provision of 1972 empowering the Government to carry out a national population policy specifies that the policy should deal not only with population size, but also with structure, dynamics and distribution. Egypt, since 1975, has a similar formulation. Korea in 1976 redefined its population policy to cover not only continued reduction of fertility, population education and improving the position and employment prospects of women, but also dispersal of large urban populations, and migration on a planned basis.

The fact that some countries are now widening their concept of population policy to include many of the determinants and some of the consequences of fertility is presenting the donors of population policy assistance with something of a dilemma. The range of possible "population" activities has now become disconcertingly wide. Indeed, the question now arises — *what is a "population activity"*? Is it whatever any particular country says it is? If the Republic of Korea includes the dispersal of economic activity and urban settlements in the official scope of its population policy, does that make this objective a "population activity"? Is a nutrition project or a women's employment project a population activity because it may have an eventual effect on fertility? Or only if it is undertaken primarily with this effect in view? Clearly, there is no straight answer.

## Changing Programme Strategies

### ● *Family Planning*

If, in the immediate aftermath of Bucharest, it seemed that the message of the conference was that the developing countries were largely rejecting family planning as the solution to the problem of over-rapid population growth, it is clear that this was a needless worry. Indeed, family planning is currently the subject of increasing interest, attention and resources on the part of developing country governments.

One important reason for this intensification of effort is the realisation on the part of a growing number of governments that their population programmes have already "creamed off" a large part of the people predisposed to accept family planning. In some cases (e.g. the Republic of Korea) the declines in the birth rate that followed the introduction of the national family planning programme have since been succeeded by flattening acceptance rates and falling continuation rates. Other countries (e.g. Thailand, Tunisia and the Philippines), although spared this latter development, have nonetheless become

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4. *The most striking and frequently-cited illustration of these inter-relationships is the situation of the State of Kerala, where average fertility is among the lowest in India. Despite a generally low economic level, Kerala has better nutrition, greater female literacy and more equal income distribution than can be found in most other Indian States.*

5. *Perhaps the 1979 Conference of the International Year of the Child will bring fresh attention to this aspect of the population problem.*

aware that in the last few years the task of attracting and keeping a growing number of the country's eligible couples to regular contraceptive practice is becoming increasingly difficult. This realistic appraisal of the situation has led to interest in "new approaches" which seek to influence the *demand* for family planning, as well as to expand and improve the *supply*.

The period since Bucharest has therefore seen increased efforts on the part of governments and private family planning agencies to make their programmes more efficient, more attractive and accessible to large numbers of people. These efforts include the following:

- The association of family planning with the public health services and with maternal and child health care in particular.
- A drive to extend the coverage of both family planning and health care in the rural areas.
- Greater use of para-medical personnel to reduce dependence on doctors and clinics.
- A move to involve the local community in the distribution of contraceptive supplies, in family planning motivation and follow-up, and in preventive health care.
- Making available a wide range of contraceptive methods.

## 2. ASSISTANCE TO POPULATION PROGRAMMES — COMMITMENTS *(thousand US dollars)*

	1970	1972	1974	1976
Australia	—	357	747	730
Austria	—	—	—	28
Belgium	10	11	654	940
Canada	—	4,683	11,725	15,032
Denmark	1,350	1,954	4,148	7,927
Finland	75	293	569	520
France	—	—	—	100
Germany	1,525	2,435	8,366	16,439
Italy	—	—	—	—
Japan	377	2,196	5,292	10,008
Netherlands	1,408	3,043	6,172	8,320
New Zealand	—	77	423	527
Norway	990	5,540	18,087	15,732
Sweden	6,520	12,669	14,409	30,873
Switzerland	—	191	134	240
United Kingdom	434	6,684	7,492	8,819
United States	72,598	120,000	100,145	135,460
<b>Total DAC</b>	<b>85,287</b>	<b>160,133</b>	<b>178,363</b>	<b>251,695</b>
UNFPA (1)	6,675	4,050	11,068	6,602
World bank	—	34,400	40,000	34,300
Other	8,625	16,592	60,383	76,942
<b>Total multilateral</b>	<b>15,300</b>	<b>55,042</b>	<b>111,451</b>	<b>117,844</b>
IPPF (2)	9,085	19,526	33,104	43,982
Other	40,281	33,808	36,110	27,333
<b>Total foundations and private agencies</b>	<b>49,366</b>	<b>53,334</b>	<b>69,214</b>	<b>71,315</b>
<b>Grand total</b>	<b>149,953</b>	<b>268,509</b>	<b>359,028</b>	<b>440,854</b>
<b>Total net (3)</b>	<b>124,689</b>	<b>182,720</b>	<b>266,394</b>	<b>313,642</b>

(1) United Nations Fund for Population Activities.

(2) International Planned Parenthood Federation.

(3) After elimination of double counting in respect of intermediate recipients.



*Government programmes to reduce family size ... are*

- Increasing interest in sterilisation as the terminal form of family size limitation (6).
- More systematic use of incentives and disincentives to promote sterilisation, and the small family norm.

One of the most promising approaches is community participation, and in particular the use of existing social institutions (schools, village councils etc.) as a means of distributing contraceptive supplies. Community-based-distribution as it is called has had a striking success in a number of countries. In Thailand, for example, contraceptives are delivered by canoe to remote villages, and their use is promoted by a wide variety of local development and incentive schemes. Family planning in industry is also on the increase as employers are encouraged to provide these services as part of health care for their workers. Other social sectors are also being mobilised including such seemingly unlikely agents as sports groups (the Philippines), youth groups (India), the political party (Tanzania), the Army (Korea), the Border Police (Thailand). The number of commercial sales outlets is also increasing, and in Egypt contraceptives can now be bought not only in pharmacies but in coffee shops, grocery stores and sweet stands.

A second aspect of community participation is the trend towards deprofessionalising family planning. Most governments recognise that it is unrealistic to look to the medical profession to bring to the rural areas adequate primary health care or family planning services. Doctors generally dislike rural practice and tend not to provide good service, particularly in family planning, which they have not been trained to consider as part of their duties. Several countries are trying to get doctors more involved in family planning work (for example, India, by special training courses and financial bonuses, or Egypt, by

6. In India, for example, despite the resentment caused by the sterilisation campaigns in the last 18 months of the former Government, the new Government has reiterated its confidence in sterilisation as a major solution to India's population problem.



merging with those designed to improve family welfare.

special training curriculum). The main trend, however, is increasingly to replace doctors by nurses, nurse-midwives and auxiliary personnel for many specialised family planning services. One of the first countries to advance along these lines was Thailand where not only the Health Ministry but also the medical profession have taken an increasingly liberal view of the need to “deprofessionalise” family planning in order to extend it in the rural areas.

### ● Population education and information

Strategies designed to expand the demand for family planning through information, education and communication began well before Bucharest. Interest in the possibilities of well-tuned programmes of *persuasion* to create awareness of the population issue has, however, grown considerably over the past few years, and with it, experience in the more finely adjusted approaches and techniques.

Population education *in school*, begun in the early 1970s, has caught the imagination of governments in a wide range of countries. The idea of creating a revolution in attitudes by subtly inserting through the normal school curriculum an appreciation of the social, economic, environmental, as well as health and family implications of population has enormous appeal. One country that has been particularly active in this area is the Philippines. For most countries, however, the nub of the problem may well be less the excellence of the teaching material and approach than the coverage and efficiency of the national school system that is to deliver it — something that lies outside the scope of population assistance.

As to the methods employed to communicate the family planning message *out-of-school*, there is enormous variety according to the characteristics and culture of the country. Thailand, for example, likes the mass media approach, as does Mexico, where transistor radios are ubiquitous. The Philippines are beginning to feel that direct, person-to-person communication is likely to be more effective. Tunisia is careful to keep the approach low-key.

### ● Integrated approaches

The need for an integrated approach to population (implicit in the World Population Plan of Action) has now been accepted, at least in principle, by most of the countries that recognise the inter-relatedness of population and development.

There are, of course, many levels of integration. The association of family planning with health in a single service can, strictly speaking, be called “integration”; so can a multi-purpose health worker; so can a programme of population education in schools. Since Bucharest, however, “integrated approaches” usually have a much broader significance. The underlying assumption is that family planning has a better chance of being successful if it is allied to the satisfaction of other social needs.

One approach that is being tried out in several developing countries links family planning with parasite control and improved nutrition in Thailand, the Republic of Korea and the Philippines (7). The basic idea is that, by providing a service which will have immediately perceptible and appreciated results (curing people of parasites), a climate of confidence will be established which will increase the acceptability of family planning also.

In Egypt, a different form of integration is being tried. The idea is to “inject” a population element into all economic and social development activities at the local level. Described enthusiastically by one foreign observer as “an attempt to create a revolution by the Establishment”, the idea is that a corps of specially trained civil servants (“coordinators”) will work with the existing local government structure so as to ensure that all local activities will be undertaken with due regard to their “population dimension”.

The problem is proving to be the translation of the integrated approach concept into action programmes, compounded by the fact that neither in developing countries nor in aid agencies is the administrative structure conducive to the development of genuinely multi-disciplinary approaches (8). The donor agencies are becoming increasingly aware of these constraints and many of them are trying to restructure their organisation so as to bring population into closer cooperation with departments dealing with other aspects of social development and welfare.

### ● Research

Interest in population research has developed markedly since Bucharest. Even countries which have disavowed any national problem of population growth (e.g. Bolivia) are encouraging research into demographic and related problems.

The most striking change is the greater emphasis on studies relating to fertility motivation and on evaluation and action-oriented research. Population projects are increasingly being designed with built-in arrangements for evaluation, and some action programmes are themselves designed largely for the purpose of testing out various hypotheses (e.g. Egypt’s Integrated Rural Development Project). Population research in general has become much closer to both operational activities and to population policy. There is also a growing interest in long-term population planning, using the term “population” to cover not only the demographic size and profile of the country, but also the need for infrastructure and social services in the various

7. *The Joint Parasite Control/Nutrition/Family Planning Project, is an initiative of the Japanese Organisation for International Cooperation in Family Planning and is supported also by funds from the International Planned Parenthood Federation and the UN Fund for Population Activities. It also covers Indonesia, Malaysia and Taiwan.*

8. *The response is of course different in the case of agencies specialising in population matters than those providing a wide range of development assistance activities.*

sectors of the economy, and the possibilities of meeting them. In a number of countries (for example, Egypt, the Philippines, India, Thailand) population research is addressing itself very seriously to the likely shape of things in the year 2000.

The donors for their part are making deliberate efforts to adapt their research activities in the population field to the changing approaches highlighted by Bucharest and in particular to give increased emphasis to the socio-economic aspects of fertility.

Recently, a whole new theme of interdisciplinary population research has been opened up by the concept of “*population impact*”. The United States Congress in 1977 stipulated that *all* proposed new development assistance is to be examined from the point of view of its likely impact on population. Just how this can meaningfully be done is currently under study by US AID in collaboration with the Rockefeller Foundation.

## Some Implications for Aid

In terms of needs for population assistance and of the actual aid requests that stem from them, the post-Bucharest situation has turned out to be less radically different from that of earlier years than many people had expected. But several changes are evident.

- There is a *greater demand for population assistance* and, contrary to what might have been expected, for assistance of the traditional kind.

All the countries reviewed want to continue to receive foreign aid to support their health services and other traditional programmes. Even countries that have gone furthest in the direction of “new approaches” are glad to have large loans from the World Bank to help provide the services which will be needed to supply the increased demand that it is hoped such approaches will eventually generate. Old-style “population assistance”, therefore, is still very much “in”, and assistance for family planning in particular.

- A growing sense of “self-reliance” is leading developing countries to insist on national independence in the formulation of population policies. It would seem unlikely that there will occur again situations like those for example in Kenya and Tunisia a decade ago, when a national population programme was established, funded, and to a large extent, run by foreign aid. There is increasing desire also for self-reliance through local production of contraceptive material and supplies (which most donors, though not all, encourage).

But there is also a residual resentment that donors in the past have tended to “push” population too hard. What is certain is that donors’ individual idiosyncracies regarding the priorities, purposes and modalities of their population assistance have been felt as constituting a constraint on coherent population planning, leading sometimes to distortion of national population programmes.

- *There is growing recognition of the value of foreign aid as a catalyst.* This perception of the role of aid seems to be current, notably in countries where population programmes are already fairly well established (e.g. Egypt, Thailand) but where the population authorities would be grateful for additional leverage with parliament, the budget authorities, or other sections of government. It would seem, however, to be equally applicable to countries of weaker government commitment. Foreign aid, particularly large-scale foreign aid provided by an international body (e.g. the World Bank), is sometimes very useful in obliging governments to put up counterpart funds, to respect officially announced programme commitments, or even to make necessary changes in legislation or administrative procedures.

It is tempting to wonder whether the donor community has fully realised the potential it possesses in this regard. Aid, after all, represents only a very small part of the total expenditures on population in a number of developing countries.

- Faced, somewhat to their surprise, with an increased demand for population assistance, donors have reacted by introducing a *new coherence into their choice of programme countries*. The criteria differ. Some donors give preference to countries most in need of help; others, to countries where the national population problem is most serious. Many of the bilateral donors (Germany, Norway, Sweden, the United Kingdom) and also the Population Council, give priority to the “poorest” countries and those most severely affected by the increase in the price of oil. Cutting across these various criteria, however, is sometimes a simple desire to direct the aid effort to where it is likely to have the most impact.

- *Only a small proportion of population assistance has so far been devoted to innovative activities.* The general reaction is to wait for the programme countries to make the first move. This is notably the attitude of the smaller bilateral donors whose self-appointed aid role is simply to be “responsive” to aid requests. But it seems to apply also to those donors who maintain regular dialogues with their counterparts in the developing countries in the context of country programming agreements (e.g. Norway, Sweden) and, to an extent, to the large multilateral donors also.

- *Population activities are involving an increasing need for local currency expenditures*, for salary supplements to induce people to work in rural areas and for incentive payments for example. There are few special concessionary arrangements for population assistance. But as donors are increasingly concerned to see that their aid practices are appropriate for “basic needs” aid for population activities will benefit from any relaxation of procedures introduced for this purpose.

- Contrary to expectations (or perhaps fears), *Bucharest has not blurred the distinction between “population activities” and “development activities”* to any considerable extent. Even though some developing countries have formulated new and very comprehensive definitions of their national population policy, they do not generally request population funding except for the usually accepted population/family planning elements.

The response of the donor agencies has tended to be conservative. Few, if any, would consider as eligible for “population assistance” as wide a spectrum of social activities as that encompassed by the population policies of the Governments of South Korea or Egypt, or for that matter, the World Population Plan of Action. In particular, not many donors are prepared to include the *consequences* of high fertility in population assistance, although they may be prepared to assist in combatting them under other development programmes.

In respect of the *determinants* of fertility, donors’ responses have been more flexible. Although the prime concern of population assistance remains the reduction of fertility, it has gradually come to be recognised by some donors, as well as by developing country governments, that in order to achieve this goal, it may be necessary to try to influence the *demand* for family planning as well as to provide the supplies. It is this issue of demand versus supply (or indirect versus direct approaches) that lay at the heart of the Bucharest controversy.

Although the volume of population assistance has increased since Bucharest, the small percentage of total ODA going to population activities (less than 3 per cent) has remained roughly unchanged. Significantly, it continues to be applied very largely, as before, to activities that are considered likely to affect the population factor *directly*.

- The message of Bucharest (population *and* development) was addressed to the whole of the international community. The population assistance donors, certainly, are doing their best to respond. But it is perhaps from the *rest* of development activities that the real leverage on the population factor may come.

# OPEC AID TO THE DEVELOPING COUNTRIES

*For the third consecutive year, OPEC aid in 1977 amounted to more than \$5.5 billion, representing more than two per cent of GNP on average which is a marked contrast to the average — 0.31 per cent in 1977 — for members of OECD's Development Assistance Committee (DAC). OPEC aid terms have been somewhat harder on average than those of the DAC, but most OPEC aid is untied. (1)*

The majority of OPEC countries embarked on a sizeable aid programme only in late 1973 or early 1974, with the sudden advent of surplus oil income. Since then they have become the second largest group of aid donors, providing over a quarter of the total aid to the developing countries. Net disbursement of concessional assistance in the last three years represents a very high share of GNP for some donors, roughly ten per cent for Qatar and the United Arab Emirates (UAE) on average, 7 per cent for Kuwait and 5.5 per cent for Saudi Arabia (Table 1).

## Geographic Distribution

Until 1974, OPEC aid was largely concentrated on Arab countries and still is, although it now reaches all parts of the world. There are two reasons for this focus: the political situation prevailing in the Middle East and the fact that the donor countries are most familiar with the situation in neighbouring countries.

The trend towards greater geographic diversification of OPEC aid is shown by the consistent and substantial growth in the number of recipients in recent years. While in 1973 two thirds of the countries receiving OPEC aid were Arab nations, by 1976 the figure had fallen to a quarter and to still less in 1977. It is also reflected in the change, in 1974, of the statutes of the Kuwait Fund and of the Abu Dhabi Fund whose lending was originally restricted to Arab League countries: the Kuwait Fund's scope was broadened to include all developing countries and that of the Abu Dhabi Fund to African and Asian countries. More recently established Arab development funds such as the Saudi Fund and the Iraq Fund for External Development have never been constrained by geographic limitations.

Many developing countries have benefited not only from the increasing diversification of OPEC bilateral aid but from the latter's contributions to the traditional multilateral organisations and to the recently established OPEC, multilateral institutions such as the Arab Bank for Economic Development in Africa (BADEA), the Islamic Development Bank

## IS OPEC AID COMPARABLE TO DAC AID?

*It is often asked how OPEC donor programmes compare with those of their DAC counterparts. Progress in establishing data on OPEC assistance means that comparisons can be made with the DAC countries, though there are still some gaps in the information. The figures quoted for OPEC aid in the DAC Chairman's report are based on the same statistical criteria as those applied by DAC countries, excluding not only transfers and payments for direct arms purchases but also financial resources for economic purposes when the terms do not meet the recognised concessionality criteria for official development assistance.*

*Following informal contacts over the last three years, a meeting between DAC and Arab aid donors and the OPEC Special Fund took place in June 1978, to discuss the exchange of information among the two main groups of donors and ways of improving coordination. This meeting helped to improve understanding of the problems faced by traditional and relatively new donors. It should encourage a continuing exchange of information on aid programmes and help both donor groups improve their aid policies and procedures.*

and the OPEC Special Fund (see Table 2) which, alone, has provided aid to more than 60 countries so far.

## Type of Aid

In the early years OPEC aid programmes were largely directed to balance-of-payments support — the main exception prior to 1973 was the Kuwait Fund which extended project loans — and this kind of aid has remained large. Another feature of OPEC aid, comparable to commodity aid provided by the DAC countries, is the provision of oil on concessional terms, particularly by Iran, Iraq and Saudi Arabia.

Lacking experienced administrative machinery for the programming of aid, OPEC countries have tended to respond directly to demands from recipients whether for budget or balance of payments support, to meet oil deficits, for drought and other emergencies.

This type of bilateral, programme aid will continue but, more and more, resources for developing countries will be in the form of project aid and channelled through bilateral and multilateral institutions.

The growing emphasis on project assistance will of course have repercussions on the volume and terms of OPEC aid. Apart from a hardening of financial terms due mainly to a reduction in the role of grants, it will tend to reduce the speed of disbursements. The geographic pattern of aid may also favour countries which have the specialised manpower resources capable of identifying projects to the detriment of the poorest countries which are less able to do so.

## Co-ordination and Co-Financing

To avoid duplication of effort and because of manpower shortages, OPEC countries have begun to co-ordinate their aid policies and efforts mainly in the framework of the OPEC Special Fund.

1. This article is based on a chapter from the DAC Chairman's Report for 1978 which will be published shortly.

# 1. CONCESSIONAL AID BY OPEC MEMBERS 1970, 1973-1977

Net Disbursements

	\$ million						As per cent of GNP					
	1970	1973	1974	1975	1976	1977	1970	1973	1974	1975	1976	1977(a)
Algeria	1.0	25.4	46.9	40.7	53.6	46.7	0.01	0.31	0.39	0.30	0.33	0.24
Iran	3.6	1.9	408.3	593.1	752.5	202.1	0.02	0.01	0.88	1.10	1.13	0.24
Iraq	2.0	11.1	422.9	218.4	231.7	53.4	0.04	0.21	3.99	1.66	1.46	0.28
Kuwait	130.0	345.2	621.5	975.3	614.3	1,441.8	1.80	5.76	5.70	6.52	4.34	10.18
Libya	63.0	214.6	147.0	261.1	93.6	109.4	1.14	3.32	1.23	2.13	0.61	0.63
Nigeria	—	4.7	15.3	13.9	82.9	63.6	—	0.04	0.07	0.05	0.27	0.19
Qatar	—	93.7	185.2	338.9	195.0	117.6	—	15.62	9.26	15.62	7.95	4.71
Saudi Arabia	155.0	304.9	1,029.1	1,997.4	2,407.1	2,373.0	1.69	3.75	4.56	6.01	5.84	4.82
United Arab Emirates	—	288.6	510.6	1,046.1	1,060.2	2,261.8	—	12.03	6.66	11.79	10.94	10.97
Venezuela	2.5	17.7	58.8	31.0	95.9	71.5	0.02	0.11	0.23	0.12	0.31	0.20
<b>TOTAL</b>	<b>357.1</b>	<b>1,307.8</b>	<b>3,445.6</b>	<b>5,515.9</b>	<b>5,586.8</b>	<b>5,740.9</b>	<b>0.43</b>	<b>1.41</b>	<b>2.01</b>	<b>2.71</b>	<b>2.29</b>	<b>2.01</b>

(a) Figures for 1977 are provisional.

Efforts are being made to harmonise the criteria governing loan allocation, project appraisal and disbursement and procurement.

A striking feature of OPEC aid is the large share of projects co-financed with traditional bilateral and multilateral aid agencies. The number of co-financed projects amounted to 106 by the end of March 1978, including projects not yet signed but at an advanced stage of negotiation. The total amount involved was roughly \$7.3 billion, of which some \$3 billion was from OPEC sources. Preliminary discussions have started on at least another fifteen projects.

Co-financing has two important advantages: it permits the sharing of the costs and risks of large-scale projects; it permits the new aid donors, with large capital resources but limited staff, to take advantage of project identification and appraisal undertaken by other bilateral and multilateral donors. OPEC aid agencies have thus been able to move more quickly into regions and sectors which were new to them and consequently were in a position to increase substantially the speed and impact of their operations. On the other hand, co-financing tends to increase the time necessary to start and implement a project.

## Saudi Arabia

Saudi Arabia is by far the largest OPEC donor country in volume terms and the second largest worldwide after the United States. Its aid agency, the Saudi Fund for

Development, was set up in 1974. Between the start of operations in February 1975 and the end of 1977, the Saudi Fund signed 61 loan agreements in favour of 29 countries, totalling \$1.6 billion (over half in 1977). Total disbursements amounted to \$248 million (\$188 million in 1977). The terms of Saudi Fund loans are largely determined by the per capita GNP and the social conditions in the recipient country, though the potential rate of return of the project is also taken into consideration. Most loans have a maturity of 20 years and a grace period of

five years, with a service charge varying between two and four per cent.

Geographic coverage ranges from Korea and Taiwan to Brazil. Half of the commitments were made to Arab countries, over a third to Asian countries, and three per cent to Latin America. Particular attention has been paid to the poorer developing countries which obtained almost three-quarters of the total.

Aid has emphasized transportation: roads, railroads, ports and the Suez Canal have accounted for more than 40 per cent

## 2. COMMITMENTS BY MAJOR ARAB/OPEC AID INSTITUTIONS 1973-1977

(\$ million)

	1973	1974	1975	1976	1977
Abu Dhabi Fund	—	55.1	46.2	169.4	138.1
Arab Fund	—	127.3	200.8	336.3	362.6
BADEA (a)	—	—	—	79.5	76.0
Islamic Development Bank	—	—	—	—	120.3
Kuwait Fund	59.5	143.4	343.1	324.5	411.8
OPEC Special Fund (b)	—	—	—	42.7	243.0
Saudi Fund	—	—	282.7	458.3	841.1
<b>TOTAL</b>	<b>59.5</b>	<b>325.8</b>	<b>872.8</b>	<b>1,410.7</b>	<b>2,192.9</b>

(a) Banque arabe pour le développement économique en Afrique, excluding commitments under the Special Arab Aid Fund for Africa, administered by BADEA, which amounted to \$56 million in 1976 and \$13 million in 1977.

(b) Not including commitments to International Fund for Agricultural Development (IFAD), the IMF Trust Fund and the United Nations Development Programme (UNDP), totalling \$477.6 million.

of cumulative commitments, while electricity, industry and agriculture each obtained over 10 per cent. Little aid has so far been provided for education, health or social development, but this situation seems to be changing. The Fund intends to intensify its efforts for the least-developed regions of recipient countries, so as to reach the poorest strata of the population.

Saudi Arabian aid however, is not limited to the activities of the Saudi Fund. The Saudi Government provided substantial grants to Egypt, Jordan and Syria as early as 1967. Following the accumulation of large financial surpluses in late 1973, Saudi Arabia rapidly enlarged the circle of its aid recipients, extending sizeable grants and loans to many Arab and non-Arab countries. Most of this has been given in the form of programme aid mainly for balance of payments support. Cumulative aid disbursements exceeded \$8.5 billion by the end of 1977 (almost \$2.4 billion for the latter year alone). In 1977 Saudi Arabia joined the World Bank's International Development Association with a \$250 million contribution, which was increased by another \$100 million in 1978. It also pledged \$55 million in early 1978 for the World Food Programme.



*The Badea finances small-scale agricultural projects helping for example to develop fishing fleets in Africa.*

## Kuwait

Kuwait, with the second largest in volume of aid among OPEC donors in 1977, has the oldest aid programme of the countries in that organisation. It began with the creation of the General Authority for the Gulf and Southern Arabia (GAGSA) in 1953, many years before Kuwait became independent. The activities of this authority are limited to education and

health; since 1955 it has built 120 schools, 10 hospitals, 20 medical centres, eight teacher training institutions and the University of Sanaa. It has also financed the training of a considerable number of teachers. Efforts are concentrated on Bahrain, Oman and the two Yemens (in the past, the poorer Gulf Emirates were included) but now, geographic coverage is likely to expand following requests from Somalia and Mauritania. Its annual budget amounted to \$35 million in 1976-77 and \$42 million in 1977-78.

The Kuwait Fund for Arab Economic Development, established shortly after independence in 1961, has been the main provider of project assistance ever since. Originally limited to Arab countries only, its field of operations now covers the whole world, except for Latin America. Geographic distribution of Fund aid is influenced neither by religious factors nor by the political or social system of the recipient (aid is given to the two Yemens, Indonesia and Vietnam, Morocco and Tanzania) but there is some preference for the smaller and poorer countries such as Burundi, the Comoros, Gambia, the Maldives, Nepal and Rwanda.

In mid 1978, Kuwait Fund commitments totalled about \$1.9 billion for 130 projects of which half was disbursed. During calendar year 1977 loan commitments amounted to \$411 million, of which half was for Arab countries while net disbursements were \$164 million. In 1978 commitments are unlikely to exceed the 1977 level, though disbursements are expected to increase substantially. In addition to lending, the Fund provides technical assistance grants, mainly for project identification.

In deciding the terms of a loan, the poverty of the recipient country is a more



*A fertiliser plant in Pakistan financed by the OPEC Special Fund.*

important criterion than the profitability of the project.

The Fund attaches particular significance to the overall social purpose of the projects, many of which are designed to improve conditions in rural areas, to promote development of neglected parts of the country and to raise the income of underprivileged segments of the population. It has often been prepared to accept a relatively lower rate of economic return if appreciable social benefits are involved. Whenever possible the Fund tries to evaluate explicitly the effects of the projects on the level of employment.

In addition to aid provided by these two specialised agencies the Government of Kuwait provides substantial amounts of aid directly to other Arab countries, mainly in grant form for balance of payments or budget support. It should also be noted that Kuwait has been contributing to the World Bank's International Development Association since 1962.

Total cumulative aid disbursements by Kuwait between 1962 (the year after independence) and 1977 has reached \$5.6 billion of which over \$2.5 billion has been in the form of bilateral grants and almost \$2.2 billion in bilateral loans. In 1977 alone aid disbursements exceeded \$1.4 billion, or more than 10 per cent of GNP.

### **United Arab Emirates (UAE)**

The UAE is the third largest OPEC donor in volume terms and the largest in terms of GNP.

The Abu Dhabi Fund for Arab Economic Development which was officially established in 1971 and signed its first loan agreements in 1974, constitutes a relatively minor but growing element in this aid programme. By the end of 1977 its commitments exceeded \$400 million (\$138 million in 1977 alone) for 43 projects in 12 Arab, 7 Asian and 5 African countries. Disbursements rose from \$1 million in 1974 to \$100 million in 1977 and are expected to reach about \$140 million in 1978. In addition, the Abu Dhabi Fund administers several loans on behalf of the Government, totalling \$260 million of which just over \$100 million was disbursed by the end of 1977.

The terms of Abu Dhabi Fund loans have been relatively hard, both the relative poverty of the recipient country and the profitability of the project being taken into consideration. No grants are presently extended but some may be provided in future for project evaluation in African countries. The Fund also intends to provide more finance in the form of equity

investment rather than in loans. This may mean that more commitments will be made for commercially profitable projects than for infrastructure. Present commitments are primarily for manufacturing, energy and extractive industries and are mainly extended to Arab countries.

Bilateral grants, which rose from \$260 million in 1973 to \$900 million in 1977, are extended directly by the Government. These grants were mainly given as balance-of-payments support to Egypt, Syria, Jordan and Oman. Although the bulk of UAE aid is bilateral, the UAE is also a relatively important source of finance for multilateral institutions and decided in 1977 to contribute to IDA and the African Development Fund.

### **Iran**

Although Iran's first loan commitment was made as early as 1967, it was only in 1974 that Iran had the financial resources to embark on an ambitious aid programme. Concessional aid disbursements jumped from \$2 million in 1973 to over \$400 million in 1974 and increased further to \$750 million in 1976, exceeding one per cent of GNP in 1975 and 1976. However, according to preliminary figures. Iranian aid appears to have fallen sharply in 1977 to \$200 million.

Until 1975 Iranian assistance was almost exclusively bilateral, but, following the creation of the OPEC Special Fund, multilateral assistance accounts for a growing share of disbursements. Contributions to traditional multilateral organisations are limited almost exclusively to the United Nations Development Fund.

The main recipients of Iranian bilateral assistance have been Egypt, India and Pakistan. Aid to Egypt and Pakistan mainly consisted of general support loans while aid to India took the form of oil credits and project assistance. Large commitments were also extended to Afghanistan, Syria and Turkey, but disbursements were fairly slow. The terms of Iranian aid commitments had been rather hard in earlier years but softened in 1976 and 1977.

### **Venezuela**

Apart from two loans totalling \$20 million in 1974, all concessional aid from Venezuela has been channelled through multilateral institutions. Total concessional aid disbursements reached their peak in 1976 when they almost reached \$100 million, equivalent to 0.31 per cent of GNP but fell in 1977 to less than \$72 million, i.e. 0.2 per cent of GNP. It should,

however, be noted that the Venezuelan Investment Fund provided relatively important amounts on non-concessional terms to several Latin-American countries and institutions.

### **Libya**

The Libyan aid programme is one of the oldest among OPEC countries, starting in 1967 with general support assistance grants to Egypt, Jordan and Syria. In 1970 and 1971 Libya deposited around \$200 million with the Central Bank of Egypt and from 1973 onwards Libyan aid disbursements averaged \$165 million per annum for various Arab, African and Asian countries, in particular Egypt, Pakistan and Vietnam. Libya has not established a specialised aid agency so far. Its development loans are administered by the Libyan Arab Foreign Bank.

### **Qatar**

Qatar is another country which has not established a specialised aid agency since the bulk of Qatar aid has consisted of cash grants to a limited number of countries, and the relatively few loans have been provided for projects co-financed with other donors. Nevertheless since 1973 Qatar has been one of the largest donors in terms of GNP.

### **Iraq**

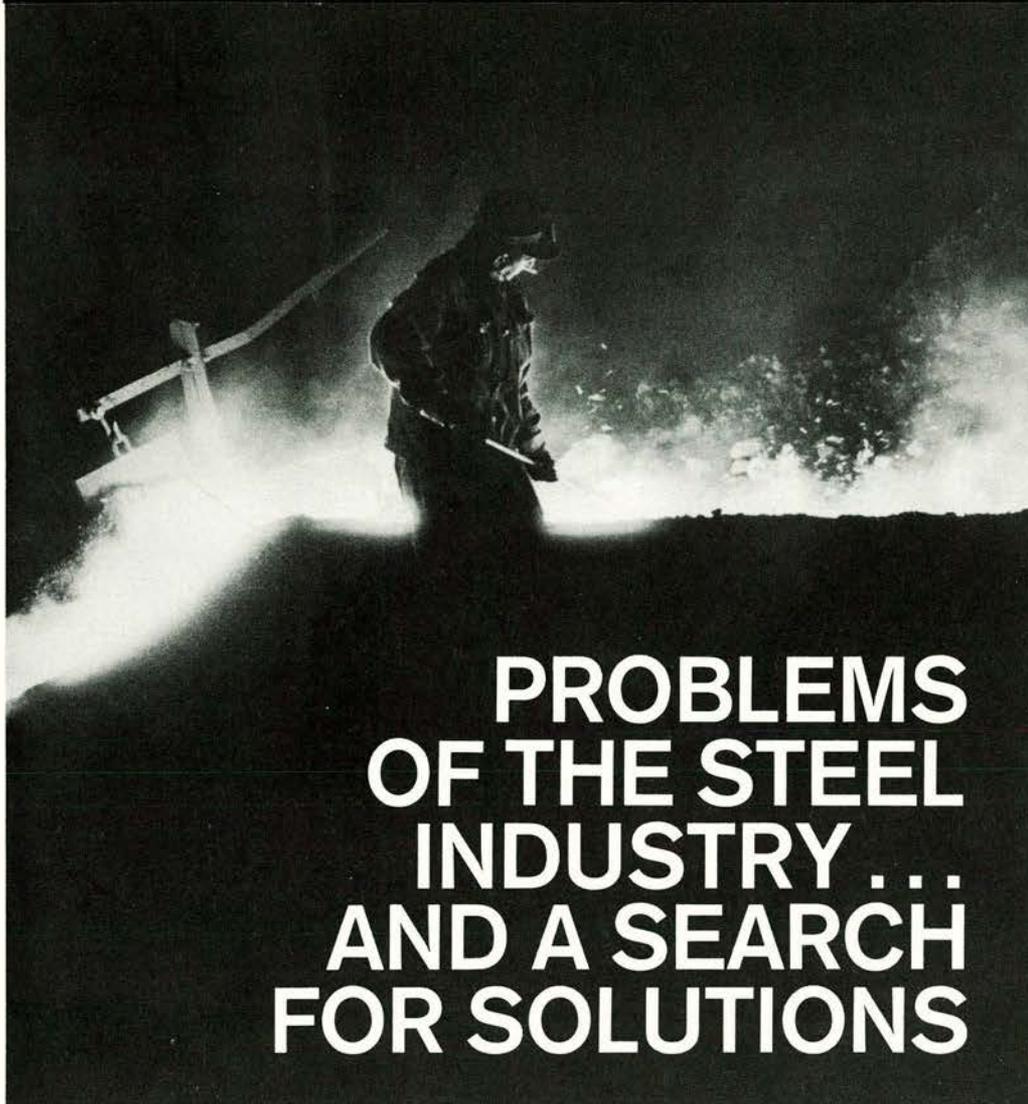
In 1974, Iraq established its Fund for External Assistance which has extended loans to several Arab countries, Afghanistan, Guinea and Uganda. Loans frequently carry 2.5 per cent interest and grant elements of about 45 per cent. Iraq also made available substantial amounts to India, Lebanon and Syria in the form of oil credits, provided balance-of-payments support to Egypt and more modest amounts to a few other countries.

### **Nigeria**

Despite its own fairly low level of development and substantial domestic requirements, Nigeria made \$80 million available to other African countries in the form of a trust fund administered by the African Development Bank and in addition has granted \$20 million for Angola and small amounts to some other countries.

### **Algeria**

Little is known about Algerian aid which apart from a \$20 million contribution to Syria in 1973 has been concentrated on African countries. The amounts involved have been fairly modest.



# PROBLEMS OF THE STEEL INDUSTRY ... AND A SEARCH FOR SOLUTIONS

**T**he world's steel industry is experiencing serious difficulties of both a cyclical and structural nature. These difficulties are widespread and are characterised by:

- persistent excess capacity;
- an exceptionally low level of demand;
- unjustifiably low prices on world markets;
- marked changes in traditional trade patterns;
- major dislocations of labour, frequently in areas already experiencing high unemployment;
- depressed financial performance among producers, which holds down investments needed for modernisation and rationalisation of plants;
- increasing governmental intervention in steel supply and demand, especially with foreign trade.

In virtually all major steel-producing nations, steel occupies a central place in the national economy. In a number of major areas, the magnitude of structural problems confronting the steel sector and resultant social and economic implications of the necessary structural adjustments are substantial.

The interrelationship of developments in the steel sectors from country to country and the potential that unilateral actions

and policies can aggravate the problems of others have become clear. The convergence of cyclical problems among many nations serves to intensify the problems faced by each. There is general recognition that there may well be recurring cyclical difficulties.

## NEW OECD STEEL COMMITTEE

*In 1977, OECD's Council established an Ad Hoc Working Group on the Steel Industry, under the chairmanship of Charles G. Wootton, Deputy Secretary General of OECD, to promote closer co-operation between governments in achieving a better understanding of the industry's critical problems and in developing policies to resolve them. The recommendation of this group was to create an OECD Steel Committee.*

*This Committee has now been set up by the Council. It provides a new vehicle for governments to examine together, in a general economic context, the short- and long-term problems facing the industry, and to develop common approaches in dealing with them. The work of the Committee will contribute to the formulation by both governments and industry of policies to restructure and modernise steel in-*

*dustries, in order to ensure their future health.*

*Participants in the Committee are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom, the United States and the European Communities.*

*Any other Member country of the Organisation which decides to participate in the Committee at a later stage may do so.*

*The Council decision includes a special provision for a possible invitation to non-OECD countries with substantial steel interests to participate in the Committee(1).*

1. The text of the article is the annex to the Council's decision.

## Objectives

In view of these difficulties, governments need to work closely together in order to:

- ensure that trade in steel will remain as unrestricted and free of distortion as possible. Restrictive actions should be avoided and, where necessary, strictly limited in scope and time, and in conformity with GATT rules (1);
- encourage reduction of barriers to trade;
- enable governments to act promptly to cope with crisis situations in close consultation with interested trading partners and in conformity with agreed principles;
- facilitate needed structural adaptations that will diminish pressures for trade actions and promote rational allocation of productive resources with the aim of achieving fully competitive enterprises;
- ensure that measures affecting the steel industry are consistent to the extent possible with general economic policies and take into account implications for related industries, including steel-consuming industries;
- avoid encouraging economically unjustified investments while recognising legitimate development needs;
- facilitate multilateral co-operation consistent with the need to maintain competi-

1. References to GATT rules and provisions do not alter the rights and obligations under the GATT of individual participants which are contracting parties to the GATT nor confer by implication equivalent rights or obligations on participants which are not contracting parties to the GATT.

tion, to anticipate and, to the extent possible, prevent problems.

### Committee Functions

OECD's new Steel Committee will meet regularly and additionally as required to:

- continuously follow national, regional and world supply and demand conditions in steel and closely related industries, including steel-consuming industries, with a view to identifying potential problems and implications and making assessments and forecasts available to all interested parties;
- continuously follow the evolution of national, regional and world steel industries with regard to employment, profits, investments, capacity, input costs, productivity, and other aspects of viability and competitiveness;
- develop common perspectives regarding emerging problems or concerns in the steel sector and establish, where appropriate, multilateral objectives or guidelines for government policies;
- regularly review and assess government policies and actions in the steel sector in the light of the current situation, agreed multilateral objectives and guidelines and the GATT and other relevant international agreements;
- identify deficiencies and gaps in existing data needed by the Committee with a view to improving national inputs to the Committee and cross-national comparability of data.

### Initial Commitments

Participants in the Steel Committee agree to the following multilateral guidelines:

1. With respect to steel crisis trade actions:

- No actions should be inconsistent with GATT provisions.
- When actions are necessary they should be as limited and temporary as practicable and appropriate to the causes which led to their introduction.
- All actions (2) taken by participants should be reported promptly to the Steel Committee and, in conformity with GATT rules, to the GATT. The status and rationale for maintaining such actions should be reported periodically to the Steel Committee. Participants agree to consult on any trade action of interest to another participant.
- When taking action under domestic law and procedures to deal with serious difficulties of its industry, a participant shall take into account the concerns of trading partners that traditional trade flows established under normal conditions



of competition not be severely disrupted.

- Price guidelines should be in conformity with the international Anti-Dumping Code and are appropriate only during crisis periods of substantial excess capacity in exporting countries, widespread price cutting by many exporters over many products in the importing market or on world markets, and depressed domestic

industry conditions such as low capacity utilisation, profits, sales, investments and employment. Such actions should be expeditiously removed or liberalised as conditions improve.

- Such price guidelines should neither
2. It is understood that these include all safeguard measures subject to the reporting requirements under the GATT.

exceed the lowest normal prices in the supplying country or countries where normal conditions of competition are prevailing, nor exceed the sums of the full costs of production (including overheads) and profit, as determined over a reasonable period of recent time, in the supplying country or countries; delivery

costs to the importing market and import duties may be included in the event that price guidelines are established on a delivered basis.

2. Participants in the Steel Committee recall their determination to abstain from destructive competition in official support of export credit; they agree that their

policies in the field of export credits for steel plant and equipment will be fully consistent with the Arrangement on Guidelines for Officially Supported Export Credits and contribute to the avoidance of competitive subsidisation of such exports.

3. Participants, recalling the general orientations for adjustment policies adopted as part of the Communiqué of the June 1978 Meeting of the Council at Ministerial level (3), agree that domestic policies to sustain steel firms during crisis periods should not shift the burden of adjustment to other countries and thus increase the likelihood of restrictive trade actions by other countries (e.g. by artificially stimulating exports or by artificially displacing imports). Further, as a general rule, domestic measures should not prevent marginal facilities from closing in those instances where the facilities cannot become commercially viable within a reasonable period of time.

4. Participants in the Steel Committee agree to make every effort to provide effective programmes for steel worker re-adaptation away from facilities affected by structural adjustments into alternative employment. To this end, they will periodically exchange information on the effectiveness of policies and programmes to assist steel workers and communities.

5. Any actions to restrict trade in steelmaking materials should be reported promptly to the Steel Committee and be subject to consultation with affected parties.

## WORLD CRUDE STEEL PRODUCTION

(Thousand Metric Tons)

	1967	1971	1973	1975	1976	1977
<b>Total OECD Countries</b>	<b>322,683</b>	<b>365,535</b>	<b>448,012</b>	<b>381,399</b>	<b>406,472</b>	<b>388,886</b>
Australia	6,365	6,753	7,699	7,869	7,794	7,334
Austria	3,023	3,960	4,238	4,069	4,476	4,093
Belgium	9,712	12,445	15,522	11,582	12,145	11,255
Canada	8,801	11,040	13,388	13,026	13,326	13,508
Denmark	401	471	453	557	722	685
Finland	411	1,025	1,615	1,616	1,649	2,160
France	19,658	22,843	25,270	21,531	23,227	22,104
Germany	36,744	40,313	49,521	40,412	42,413	38,984
Greece	210	475	1,087	900	1,110	(1,000)
Ireland	54	80	116	81	58	47
Italy	15,890	17,452	20,995	21,865	23,455	23,335
Japan	62,154	88,557	119,322	102,313	107,384	102,405
Luxembourg	4,481	5,241	5,924	4,624	4,565	4,329
Netherlands	3,401	5,083	5,623	4,817	5,178	4,922
New Zealand	65	144	190	185	214	200
Norway	790	883	963	891	886	704
Portugal	315	412	501	443	461	532
Spain	4,512	8,025	10,800	11,102	10,982	11,169
Sweden	4,768	5,271	5,663	5,611	5,139	3,968
Switzerland	445	532	584	420	540	655
Turkey	996	1,235	1,354	1,703	1,972	1,865
United Kingdom	24,346	24,240	26,722	19,838	22,463	20,490
United States (1)	115,141	109,055	130,462	105,944	116,313	113,142
<i>Yugoslavia (2)</i>	<i>1,832</i>	<i>2,453</i>	<i>2,676</i>	<i>2,916</i>	<i>2,751</i>	<i>3,182</i>
<b>Eastern Europe</b>	<b>33,128</b>	<b>42,363</b>	<b>46,809</b>	<b>51,298</b>	<b>54,155</b>	<b>57,514</b>
<b>USSR</b>	<b>102,235</b>	<b>120,637</b>	<b>131,481</b>	<b>141,325</b>	<b>144,800</b>	<b>146,700</b>
<b>Total Latin America</b>	<b>9,792</b>	<b>13,999</b>	<b>16,687</b>	<b>18,595</b>	<b>19,388</b>	<b>21,924</b>
Argentina	1,326	1,915	2,205	2,208	2,410	2,684
Brazil	3,665	5,997	7,150	8,387	9,253	11,253
Mexico	3,023	3,821	4,760	5,282	5,288	5,553
<b>Total Africa</b>	<b>3,972</b>	<b>5,515</b>	<b>6,672</b>	<b>(7,802)</b>	<b>(8,184)</b>	<b>(8,456)</b>
South Africa	3,702	4,881	5,722	6,831	7,106	7,306
<b>Middle East</b>	<b>475</b>	<b>530</b>	<b>845</b>	<b>1,126</b>	<b>1,185</b>	<b>1,340</b>
<b>Total Asia (excluding Japan)</b>	<b>22,872</b>	<b>31,340</b>	<b>38,915</b>	<b>41,356</b>	<b>40,133</b>	<b>44,192</b>
China	(14,000)	(21,000)	(26,000)	(26,000)	(21,000)	23,400
India	6,331	6,101	6,889	7,991	9,364	10,009
Dem. Rep. of Korea	(1,450)	(2,360)	(2,900)	(2,900)	(3,000)	(3,150)
Rep. of Korea	300	472	1,157	1,994	3,515	4,243
Taiwan	443	470	535	1,010	1,628	1,770

(1) Excludes steel for castings produced by companies not producing steel ingots (about 2,500,000 tons in 1973).

(2) Yugoslavia has a special status within the OECD.

Source: International Iron and Steel Institute.

### Initial Work Programme

With respect to the commitments agreed in this resolution the Steel Committee should promptly undertake an examination of government policies affecting the steel sector in the following areas:

- evolution of trade flows and the impact on them of government measures;
- guidelines for steel trade actions;
- adaptation of production structure through modernisation, closures and reconversions;
- re-adaptation of labour;
- domestic policies to sustain steel production and stimulate steel demand in times of crisis;
- domestic pricing and supply;
- government export credits for steel plant and equipment.

The Committee will continue the work initiated in the Ad Hoc Steel Group and may undertake examinations in other areas as deemed appropriate by the participants.

3. See OECD Observer No. 93, July 1978.

# NUCLEAR WASTES : A PROBLEM OF PERSPECTIVE ?

by I.G.K. Williams

Director General, OECD Nuclear Energy Agency (1)

The climate of opinion towards nuclear energy evidently reflects serious anxiety in many countries. This applies particularly to the problems of radioactive waste management or, more generally, to the achievement of acceptable standards of safety. Since this anxiety is usually quite disproportionate, it indicates the need to disseminate objective information in language which ordinary people can understand. There is an urgent need to encourage a more accurate perspective in the public mind on these questions.

The idea of halting nuclear programmes pending the demonstration of a "final" solution to the problems of radioactive waste has an obvious appeal to well-meaning legislators. At first sight, this seems to show a proper regard for human welfare, but the consequences of such an interruption towards the end of the next decade should be given comparable weight, as should the effects on human welfare of major interruptions in, for example, electricity supplies. Such an approach also seems to be based on an impression, which is wholly erroneous, that there are major unresolved waste management problems and that there is an irresponsible trend towards bequeathing these to future generations. What then are the real problems of radioactive waste management? In what perspective should they properly be seen?

## Nature of Nuclear Wastes

Perhaps the first point to make is that there is nothing inherently reprehensible in producing waste. It is no more than normal good housekeeping to keep the working environment clean and tidy and there are, of course, few industrial processes which do not give rise to by-products which may or may not have an economic value. It is right that the nuclear industry should attach considerable importance to high standards of housekeeping and, particularly, to the additional consideration that wastes emerging from areas containing radioactive materials must, as a measure of prudence, be treated as radioactive wastes. In view of the wide range of operations, from laboratory scale research through operation of power plants to the very differing industrial phases of the nuclear fuel cycle, it is not surprising that the nuclear industry generates a multiplicity of different forms of radioactive waste. Some of these are characterised by their very large volume and low radioactivity while others, notably those emerging in liquid form from reprocessing plants, are highly radioactive and require extremely sophisticated management techniques.

The variety of radioactive waste production was described, together with an indication of the relative scale and significance of the various categories, in a report entitled "Objectives, Concepts and Strategies for the Management of Radioactive Waste arising from Nuclear Power Programmes" which was published by OECD about a year ago (2). This report was prepared under the chairmanship of Dr. Carlo Polvani of Italy by a Group of Experts drawn from 8 countries. For the major part of the wastes, in terms of volume rather than of radioactivity, the Polvani Report showed

that technical methods are demonstrated and available for their handling, treatment and disposal. In many cases, a variety of options exists and the choice between these is usually a function of local considerations, of which protection of the public health and environment and of workers in the industry are paramount. The fact that various approaches may be adopted is one of the reasons why differing systems exist for classification of wastes and is certainly not evidence of indecision on the part of those with responsibility in this field, nor of variable safety standards. Indeed, the existence of a variety of technical solutions should be seen as a justification for confidence that these problems have been effectively mastered.

## High Level Wastes

The main issue in radioactive waste management, and the one on which perhaps most controversy is centred, concerns the disposal of the high level wastes arising from the reprocessing of spent fuel or, if the once-through fuel cycle (3) is adopted, of the spent fuel itself. These wastes contain well over 99 per cent of the radioactivity in wastes generated by the nuclear industry and it is therefore appropriate that our attention should be directed primarily towards them.

(1) This article is based on a speech presented at a recent International Conference on the Nuclear Fuel Cycle, jointly organised by the United States Atomic Industrial Forum and the British Nuclear Forum.

(2) See The OECD Observer No. 88/September 1977.

(3) That is, a single use of nuclear fuel without recycling of residual uranium or the plutonium produced by irradiation.

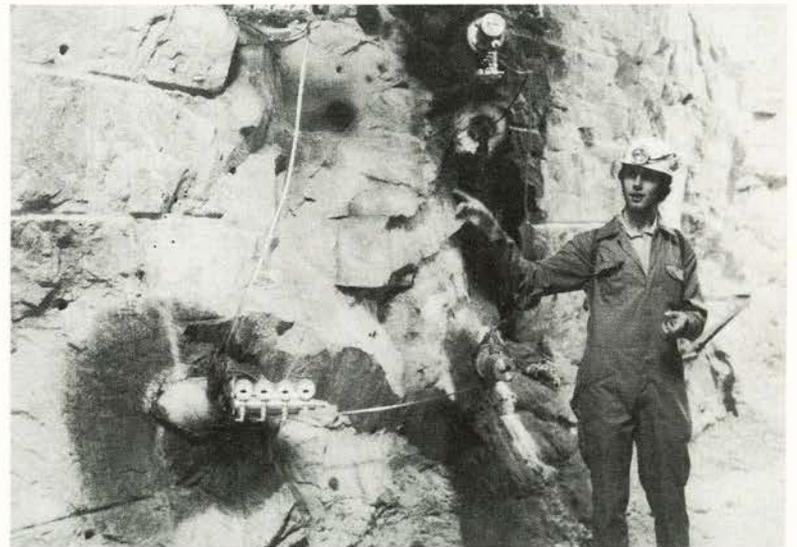
*As an inter-governmental body, the OECD Nuclear Energy Agency (NEA), is concerned, by definition, with the problems of nuclear development confronting governments. In other words, it is not concerned with promoting nuclear energy as such, although it has noted the virtually unanimous conclusion of all objective analysts that a major contribution from nuclear power, at least in this century, is indispensable for most countries and for the OECD area as a whole. The Agency is concerned with helping governments to reach rational and objective conclusions about the arrangements for implementing the nuclear programmes they consider appropriate to their particular situations. A major part of this effort is devoted to questions of safety and regulation because these are necessarily a preoccupation of governments. Since absolute safety is unattainable in any field of human endeavour, the NEA programmes are designed to ensure that the undoubted risks are accurately appreciated and that suitable techniques are fully developed for anticipating, preventing, controlling and mitigating their consequences. It is then for society to determine how much it is willing to pay to reduce the potential hazards and to weigh the residual risks against the consequences of dispensing with the use of nuclear energy.*



*An international joint venture (United States, Sweden) at the Stripa mine (Sweden). The pictures show an in situ experiment designed to simulate the heating effects of placing high level waste in crystalline rock formations.*

In this area there seems to be a tendency in some quarters to believe that no satisfactory solution can be proposed to some of the problems of radioactive waste management which are involved. This view may owe something to the considerations that a number of earlier waste management practices are now seen to be less than satisfactory and that the subject has only recently been accorded the priority it deserves. Nevertheless, there is no justification for a belief that damage has been or will be caused to man or the environment by these earlier practices. There is also no reason to lack confidence because some practices currently being applied are admittedly of an interim nature. In fact, of course, even though we are only at the threshold of nuclear power, all the problems of radioactive waste management generated or to be generated by the nuclear industry exist already: what we have to prepare for now is the scale of these problems which will necessarily accompany the widespread adoption of nuclear power programmes. Meanwhile, the adoption of interim solutions is perfectly legitimate during the period when longer term policies are being established and preparations are being made for the scale of operations which can be foreseen in the future.

Although most concern has been expressed about the very long periods of time during which these high level wastes remain hazardous, it is perhaps important to keep in a proper perspective that the hazards differ for their different components. The high level wastes from reprocessing are, in fact, a mixture of fission products, residual uranium and transuranium elements, of which plutonium is the best known. The precise composition varies according to the characteristics of the fuel from which the wastes have been derived and the length of time the fuel was irradiated in a reactor core. The dominant hazard varies through time, according to the differing rates of decay. The analysis of these hazards is therefore a matter of great complexity but, from the point of view of the satisfactory management of these materials as wastes, certain broad conclusions can be drawn.



The first is that the significant fission products are beta/gamma emitters, which means that they constitute both an external radiation hazard against which biological organisms need to be shielded and an ingestion hazard if taken into the human body. On the other hand, their decay rates are such that, after a few hundred years, they are no longer the primary concern.

Probably most public attention has been focussed on the very slow rate of decay and therefore very long persistence of the hazards associated with some plutonium isotopes in these high level wastes. Less attention has been given to the nature of the hazard from this plutonium. Being an alpha emitter, plutonium presents no significant external danger. Its radiation will not penetrate the skin. Moreover, the uptake of plutonium into the human body by ingestion, for example through the food chain and absorption through the gut, is extremely low and is not regarded as an important pathway in terms of radiation exposure of man. Extensive study has, in fact, shown that by far the most sensitive pathway into the human body is by inhalation. This means, of course, that the plutonium has to be presented in a form in which it can be inhaled before it becomes as dangerous as it is often described.

→



*Vitrification of high level radioactive waste. Above: casting of the melted glass mixed with simulated high level waste solutions during testing of the plant at Marcoule (France). Below: engineered storage of vitrified high-level waste blocks at Marcoule. Pending their later disposal, these cylindrical glass blocks are stored in vertical pits in a concrete matrix, the "plugs" of which are visible on the picture. Cooling of the blocks is ensured by forced air ventilation.*

## Isolation from the Biosphere

Nevertheless, a great deal of public anxiety continues to be directed towards the total levels of radioactivity involved in these wastes and the continuation of unspecified dangers for hundreds of thousands of years. It cannot be too strongly emphasized that the degree of risk is not the mere presence in the environment of dangerous materials, for however many years, but the likelihood of exposure to them; and, with a view to keeping radioactive wastes in perspective, it may be observed that there are plenty of other industrial wastes with this characteristic of high toxicity and long term persistence. Certain cyanide compounds and some heavy metals are good examples. The only satisfactory solution for wastes in these categories is isolation from the biosphere for sufficiently long periods of time to provide assurance that mankind will be permanently protected.

Much of the concern arises because it is so difficult to inspire confidence that this degree of protection can be achieved. People need to be convinced that the proposed solution of deep geological disposal will, in fact, work and this is why there has been such a clamour for "demonstration" of this disposal concept.

Probably the most difficult aspect for the man in the street to accept is that the integrity of geological repositories would remain unimpaired for the periods of time which are frequently quoted. He recognises that mining technology provides a satisfactory basis for emplacement of wastes in deep geological formations and realises that care would be taken to avoid areas of chronic geological instability. Nevertheless, he finds it difficult to accept that such unpleasant wastes could remain undisturbed for so long. Fortunately, Nature has provided an interesting demonstration which has some relevance to current problems.

This is, of course, the Oklo phenomenon in Gabon. For those not familiar with this, it should be mentioned that a uranium



deposit there was found to contain a significantly lower content of the fissile uranium 235 isotope than occurs naturally everywhere else. Intensive investigation of this phenomenon by French scientists revealed that a self-sustaining chain reaction of the type now induced in reactor cores took place about 1,800 million years ago and lasted approximately half a million years. Geochemical studies have shown that certain radionuclides have migrated from the reaction zone but the available data show that absolutely no migration of plutonium took place, probably because it was trapped in the extremely stable uranium minerals where it was formed, and that it remained in the exact location where it was generated until complete decay. Although the circumstances may have been highly favourable to this sequence, the significance of the Oklo phenomenon is that it demonstrates the feasibility of successful isolation of long lived radioactive wastes from the biosphere.

### **Preparation for Disposal**

There is general agreement that the highly active liquid wastes arising from reprocessing of spent fuel should be converted into solid form for ease of handling, transportation, storage and emplacement in the chosen geological repository. A variety of technologies for this conversion have been studied and the first industrial-scale plant has been commissioned this year at Marcoule in France. The product is a borosilicate glass. Much concern has been expressed about the possibility that underground flowing water would leach the radioactivity from a geological repository. This concern is based on a fear that the radioactivity would find its way back into the human food chain, with catastrophic consequences.

Experiments at Marcoule have, in fact, shown that the leaching rate at 25°C would lead to a dissolution of approximately 1 mm of glass thickness every 3,000 years. Variations by a factor of 10 are possible according to water quality and the temperature range which might be found in a real waste repository. Experiments conducted in Sweden have so far corroborated the French results. On this sort of timescale and, given the other barriers to be surmounted before any radioactivity would reach the surface, the danger of ingestion through the food chain could not be significant. Nevertheless, it is essential to continue meticulous investigation of these phenomena in order to build up a fund of detailed information as a basis for prudent policy decisions. This work enjoys a high priority and is the subject of a fruitful international exchange of information and experience.

This example also illustrates that the concept of geological disposal involves the creation of successive barriers to the return of hazardous materials to the biosphere. First, there is the nature of the waste itself: in the case just mentioned a virtually insoluble glass. Secondly, encapsulation by suitable containers designed to have stability in the particular geochemical environment. Thirdly, the emplacement would be chosen for the integrity it would promise as a geological formation. If all these fail, various natural mechanisms, such as ion exchange, filtration and surface adsorption would retard the migration of most radionuclides. Catastrophic failure is therefore inconceivable.

We are therefore confronted with the situation that, after a few hundred years, a significant hazard to the population could occur only if the solidified high level wastes were recovered from a deep geological emplacement, reduced to a form which could be inhaled, which would not be easy, and dispersed in the atmosphere of populated places. Provided the geological repository was wisely chosen and administrative measures were kept in place for the sort of period — a few centuries — that can reasonably be depended upon, unauthorised access to the emplaced materials could be confidently avoided. In the longer term future, when it

would not be reasonable to depend with certainty on an effective administrative control, any geological exploration leading to interference with a waste repository could certainly be expected to include sophisticated means to provide prompt warning of any remaining hazards involved.

Thus, it is hardly surprising that the concept of geological disposal has been independently reaffirmed by authoritative investigators in several countries as well as at the international level. It does not have to be proved: the problem is to identify suitable geological environments, having regard to their accessibility and to the operational convenience of adopting them as waste repositories. Implementation of a geological disposal policy then requires meticulous care, founded on thorough investigations and research and development. It is evidently not one lending itself to instant demonstration.

### **Other Types of Wastes**

I have dwelt at some length on the problem of high level wastes from reprocessing because they have been the focus for most public comment. There is no reason to doubt that emplacement in deep geological formations of spent fuel in suitably designed encapsulation would provide a similar degree of security and may also be accepted as providing a satisfactory permanent solution.

Less public attention has been directed towards other questions of radioactive waste management which are, nevertheless, also recognised by those with responsibility as being of comparable importance. In particular, considerable effort is being devoted at international level to the problems associated with other transuranic wastes and with wastes from uranium mining and milling operations. Despite the low concentrations of radioactivity in these latter wastes some could, in the absence of suitable management, represent sources of low level radiation exposure of local or more distant populations over very long time periods. Again a fruitful programme of international co-operation is leading to a pooling of knowledge and experience concerning these problems and the measures to be taken to minimise the release and potential impact of radioactivity. Implementation of these measures will ensure that the public health hazards from uranium mining and milling are maintained at a very low level.

These are, of course, only the more prominent problems associated with radioactive waste management. As has been implicit in much of my account, continuation of intensive research, development and demonstration programmes is essential, but for the purpose of establishing and refining techniques rather than the feasibility of acceptable practices. Some may be inclined to interpret this need for continued intensive investigation as evidence of unresolved problems. This is true only in the sense that, had research and development in the aircraft industry ceased when Bleriot crossed the Channel in 1909, the aircraft now in use would be the same as he used. Adequate and acceptable practices can always be improved. It is therefore a matter for considerable regret that the public pressure for demonstration is accompanied so often by resistance to the programmes of investigation which can go so far towards providing the reassurance everyone seeks.

### **Disposal vs. Storage**

One consequence of failure to gain public confidence is that many with responsibility for resolving the problems of radioactive waste management have become defensive and are perhaps unwittingly contributing to the maintenance of public concern. There seems, for example, to be a great reluctance to talk about disposal, which has an air of finality, and instead to use such

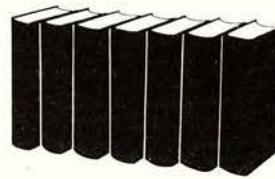
euphemisms as "final storage" or even "ultimate storage", which contain the implication of retrievability if mistaken decisions are taken. This is very regrettable for two main reasons. First, the technologies of radioactive waste management, particularly concerning spent fuel or high level liquid wastes, require lengthy cooling periods or other stages which make storage (in the sense of having the intention to retrieve) perfectly appropriate. In the case of spent fuel, for example, storage for a period measured in decades may be required to keep open the option of reprocessing to recycle usable uranium and plutonium. Secondly, greater assurance would surely be given by the bold adoption of practices to assure isolation from the biosphere and the use of terms making this intention clear. An impression that there remains an intention to retrieve after disposal has been implemented must imply that the isolation from the biosphere could be easily breached. In other words, a more confident presentation of the respective places of storage and disposal in the true meaning of these terms would, in my view, contribute to improving the climate of opinion.

At the same time, it is important not to maintain storage as an expedient when steps towards a final solution are available and the option of an alternative does not need to be kept open. In particular, it must be a high priority to convert liquid wastes from reprocessing to solid forms and the capacity of the plants needed for this should provide for elimination of the accumulated backlog within a reasonable time. Storage of high level liquids was an acceptable practice for a few decades when solidification techniques were being developed but is manifestly less satisfactory than storage in solid form. This consideration is perhaps one to which particular attention should be given in relation to wastes from defence programmes. If the backlog of defence wastes could be cleared up rapidly, this would demonstrate that civilian nuclear power need not create comparable problems. In fact, defence wastes are in general relatively less concentrated and these could appropriately be the first candidates for geological disposal in solidified form as a means of encouraging public confidence in this method. It should also not be overlooked that the debris from underground weapon testing is, of course, already a form of geological disposal. Valuable information is being derived from this aspect of these experiences.

### The Basis for Confidence

My purpose in this article has been to try to put radioactive waste management into a more accurate perspective than it appears, from the evidence of our newspapers, to enjoy in the public mind. While we have to accept that the media cater for what has been described as "the public's insatiable thirst for bad news", it is undoubtedly true that many public projections bear little relation to the responsible and successful approach of those confronted by the real problems of radioactive waste management. These exist already in all essential respects and it is therefore very much in the public interest that encouragement should be given to the development of acceptable and accepted solutions. Maintenance of a climate of opinion which threatens to obstruct achievement of this result can, in fact, have the entirely undesirable effect of postponing satisfactory solutions and requiring the maintenance of interim measures which are inherently less satisfactory.

Although I end with a plea for a more objective presentation of this matter by the media and, in particular, greater recognition of the responsibility with which the problems of nuclear wastes are being tackled, I also welcome continued public vigilance. Public sensitivity will always be a healthy antidote to any tendency towards complacency and will remain an important element in ensuring that exemplary standards of safety and consideration for the environment will continue to be the hallmark of the nuclear industry.



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