

(which, in fact, was not so much bad as simply worse than the previous, exceptionally good, years of the 1960s). But these shortages, although real, were not physically necessary; they resulted from the control of the market by producers in the developed countries.

LDCs can only pay for the food they import with the foreign exchange earned by their exports; ironically, agricultural produce makes up three-quarters of those exports, but the LDCs' share of the world market in these products is falling as the developed countries produce more and increase their domination of the market. According to *War on Want*, "In 1966, prices for exports from the DCs were 13% higher than in 1958 while prices for exports from the LDCs fell by 11% . . . more and more has to be exported to buy the same goods from the DCs". The resulting imbalance, with the developing nations' debts to foreign countries increasing substantially faster than their GNP, means that in the majority of cases the gap between debts contracted and the means of repaying them is widening every year. As this gap increases so do the inequalities between developed and developing nations.

Internal factors

The responsibility for this, however, does not lie solely with the developed nations' control over world markets. Their market control does place the poor of developing nations at a severe

disadvantage, but the inequalities are heavily reinforced by agricultural policies and local price factors within the developing nations themselves, where agriculture accounts for more than a third of total production and rural regions provide about three-quarters of the total population.

These regions and most of their impoverished population have little say or control over their economy. The majority are landless or own less than a single hectare of land. What little agricultural policy there is in many LDCs, including investment programmes, is heavily biased in favour of the prosperous minority. The result of this imbalance is clearly seen in the example of India, where 7.7% of the population own more than 50% of the head. More often than not the situation is made worse by national development policies which stress industrialisation of urban areas dependent on the agricultural sector for resources.

As Keith Griffin has pointed out, the outstanding feature of the agricultural sector in almost all LDCs is the bias in access to factors of production (that is, land, credit, water, fertilizers, technical knowledge, etc.) towards the prosperous landowners. Government policies supported by the economic and political influence of this minority virtually control the market structure and allocation of resources—thus assuring no shift in the *status quo* detrimental to their interests.

Technical change, once heralded in the form of the "green revolution" as

the solution to man's hunger, becomes a further aid to the rich because of their dominance of the world system. Technical change which relies on easy access to credit and often substantial inputs of water, fertilizer and pesticides, may well increase production—but only for the minority of landowners in whose favour the market is biased. Any innovation under the control of the *status quo* tends to strengthen the *status quo*. Agricultural innovation has become widespread, but the result has not only been increases in productivity but also increases in inequality; the rich get richer, but the poor get poorer.

In recent years the world's food supply has increased faster than the rate of population growth. As suggested by nearly all recent analysis, physical factors are not critical to feeding the world's population. But the fact that fewer people need face starvation than previously believed does not reduce the seriousness of the difficulties which remain: the problems are now recognised as those of poverty and politics. It might seem that these are no less insurmountable than the physical restrictions often assumed—although we could feed a much larger population, it may require a social revolution to remove the inequalities at the root of poverty. As the UK Select Committee on Overseas Development stressed in its report, "the main answer to the world food problem is to give those who are hungry the means to feed themselves, or the income to buy food". □

USA

Antidisestablishmentarianism

Arrangements by which the US President receives advice on science matters have now been institutionalised. Colin Norman reports from Washington.

WITH storm clouds hovering overhead, and with many elder statesmen of the scientific community in attendance, President Ford last week held a small ceremony in the White House rose garden to mark the signing into law of a bill re-establishing a science policy office in the White House.

The event was pure ceremony. Contrary to rumours flying around beforehand, Mr Ford did not nominate anybody to head the office—the director will also be the President's Science Adviser—nor did he indicate how he intends to use the office when it is eventually set up. Instead, he simply took the opportunity to make a few obligatory remarks about the importance of science and technology in

helping to meet "the challenges and opportunities which lie ahead for this nation and the world", and signed the bill with "great pleasure". Fortunately, the rain held off.

The ceremony nevertheless marked an important event in the annals of science policy. The bill, which had been championed by numerous prominent scientists and also by Vice-President Nelson Rockefeller, essentially reinstates the science policy apparatus dismantled three years ago by Mr Nixon. Moreover, since the office has now been established by an Act of Congress—rather than an act of Presidential pique—to remove it.

Though scientists, of course, played a prominent role in shaping national policy during the Second World War, they didn't have a permanent place in the White House until 1957, when President Eisenhower acquired a full-time science adviser during the post-Sputnik panic which swept the

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President Ford signs the science policy bill, watched by (left) Senator Frank Moss, chairman of the Senate Space Committee, and Representative Olin Teague, chairman of the House Committee on Science and Technology.

N.E.W.S. photo

country. The adviser was made chairman of the President's Science Advisory Committee, a panel of scientists drawn from academe and industry. President Kennedy established the Office of Science and Technology (OST)

THE Senate last week followed the lead of the House of Representatives by voting to cut off federal support for a controversial research project designed to assess the effects, if any, of marijuana on human sexual behaviour. The Senate's action will ensure that the project will be aborted, and thus for the first time Congress has reached deep into the scientific peer review process and cut off a research project for political reasons.

The project, a \$121,000 two-year investigation which was to have been conducted by Dr Harris Rubin at Southern Illinois University, had been approved as scientifically meritorious by a committee of behavioural scientists, endorsed by a top level government advisory committee, and supported by a panel consisting of the federal government's most senior health officials. Congress voted to stop the project, however, because some powerful members have labelled it morally unacceptable and scientifically trivial.

The Senate, at least, held a short debate on the matter before deciding to shut the project off. Senator William D. Hathaway, Democrat from Maine, offered an amendment to restore the funds, arguing that "the real issue is the integrity of a carefully constructed government-wide mechanism for awarding research grants and contracts". He argued that by voting to deny the funds, "possibly the least expert group of federal employees to gather in one building—the US Congress—seems now to have taken upon itself the role of grand inquisitor with regard to scientific research". Hathaway's amendment was easily defeated, however, on a voice vote.

It's not too surprising that, once the issue was raised, Congress should vote to eliminate Harris's project. It is, after all, an election year, and Congressmen would be reluctant to defend a vote in favour of spending tax payers' money on a project involving marijuana and sex. But, as the Federation of American Scientists

(FAS) noted in a statement last week, the votes set a worrying precedent. "Every controversial project that finds its anti-champion can now be expected to be raised" in Congress, FAS suggests.



● After months of debate by several committees of scientists and a week of conflicting rumours, the Food and Drug Administration (FDA) formally announced last week that it has no intention of lifting its controversial ban on the artificial sweetener cyclamate. Citing a number of "unresolved safety questions", FDA Commissioner Dr Alexander Schmidt said that he has asked Abbott Laboratories, the manufacturer of cyclamate, to withdraw its petition seeking to restore the sweetener to the market. If the petition is not withdrawn, Schmidt said he would simply reject it.

Cyclamate was banned in 1969, on the basis of studies which suggested that it increased the incidence of bladder tumours in rats when fed to them in high doses over prolonged periods. The FDA ban initiated a chain of similar actions in other countries.

The FDA's decision to keep cyclamate off the market is, however, based more on questions of general toxicity than on the shaky evidence that cyclamate is a carcinogen. A panel of scientific experts, assembled by the National Cancer Institute, reported last February that "although the

present evidence does not establish the carcinogenicity of cyclamate", a number of studies have raised worrying questions. In short, the evidence for carcinogenicity is equivocal.

Schmidt said last week that he is worried about "unanswered questions" concerning cyclamate's potential for causing damage to reproductive organs, causing chromosomal damage, and elevating blood pressure.

A spokesman for Abbott has said that it is unlikely that more safety tests will be conducted to resolve those questions, and it is therefore unlikely that Abbott will renew its petition. FDA's decision thus could be the final word in the long battle over the sweetener.

● Mr Jimmy Carter, the leading candidate to be the Democratic Party's Presidential nominee, last week called for a voluntary, worldwide moratorium on the sale of uranium enrichment and nuclear fuel reprocessing plants, including those sales already negotiated. Speaking at a conference at the United Nations Centre, Carter said that the threat of nuclear weapons proliferation from such sales is too great for "business as usual". He called for an un-sponsored world energy conference to discuss worldwide energy problems, and he said that "there is a moral imperative that demands a worldwide effort to ensure that if we travel down the nuclear road we do so with our eyes open".

The nuclear powers, he suggested, should provide more leadership in preventing the spread of nuclear weapons. For a start, he suggested that the United States and the Soviet Union should agree on a five-year moratorium on weapons tests, during which they should negotiate a complete nuclear test ban. The recently negotiated threshold test ban, he said, is "wholly inadequate".

As for the US nuclear power programme, Carter suggested that it should be kept to "the minimum necessary to meet our needs", and it should have to meet "much stronger safety standards".

five years later, as a small White House operation headed by his science adviser, and that apparatus remained intact until 1973. President Nixon then suddenly scrapped it, largely because he disagreed with much of the advice it was offering him, particularly on such matters as the need for an anti-ballistic missile system and the SST programme. When Mr Nixon abolished OST, he gave the head of the National Science Foundation the extra job of being science adviser to the White House.

The bill signed by Mr Ford last

week will establish a small Office of Science and Technology Policy (OSTP) to advise the President and other White House bodies on matters involving science and technology. It also establishes a committee of scientists to conduct a two-year review of the federal government's science and technology programmes, after which the committee can be kept in business as an advisory unit if the President so desires. White House officials say that President Ford hopes soon to nominate somebody as his science adviser, but it

will take several weeks to get the office under way.

It should be noted that the establishment of the office couldn't have come at a much worse time. Having suffered a series of staggering defeats in primary elections these past two weeks, Mr Ford's tenure in the White House must be considered precarious, at best. Thus, with a change of Administration at least on the cards a few months after OSTP is established, nothing dramatic should be expected from the office for some time. □