

Can the West contribute more to Human Frontiers?

Japan is urging Western countries to contribute more to the Human Frontier Science Program which supports international research on the brain and molecular biology. But whether they can and should comply is debatable.

When Japan proposed the Human Frontier Science Programme ten years ago with calls for ¥1,000 billion, or several billion dollars, to be invested over 20 years in international research on the brain and advanced robotics, it was greeted with understandable scepticism by both scientists and government officials in the West. They saw this as yet another attempt by Japan to pick the brains of Western scientists to develop new technology.

Since then, however, scientists in both Japan and the West have moulded Frontiers into a small but excellent programme that supports basic research on the brain and biological functions at the molecular level, involving international teams of scientists. The programme, which is based at a foundation in Strasbourg, France, and receives funds from six European nations, the European Union, the United States and Japan, was given glowing reports last year in an external review by an international panel of scientists. The intense and growing competition for the limited number of awards is also testimony to the popularity of the programme. The wider international and interdisciplinary scope of Frontiers research gives it a dimension that national programmes lack. In principle, it deserves to grow.

At present, Japan provides 80 per cent of the annual budget of \$45 million, despite agreement at the last intergovernmental conference in 1992 that other participants together should match Japan's contribution "as soon as feasible". At the same time, Japanese scientists receive only about 7 per cent of the awards. By far the largest share of grants, each worth on average about a quarter of a million dollars a year, go to principal investigators in the United States and European countries.

Japan thus seems to have a legitimate case for asking for larger contributions from the West. At a preparatory meeting later this month it will push for this to be put on the agenda of an intergovern-

mental conference to be held later this year (see page 100).

There are political reasons favouring stronger international support. Japan has been under pressure from Western governments over the past decade to contribute more to basic research. It has responded by putting substantial new funds into domestic government research and into international programmes initiated both in Japan and the West. This week's latest contribution to the European Laboratory for Particle Physics (CERN), which adds to several tens of millions of dollars recently given to CERN by Japan, is one example (see page 102). The CERN funds are a response to intense lobbying by European diplomats in Tokyo and by CERN officials.

Can Western governments expect such contributions to continue if they do not reciprocate? Some might argue that one cannot talk about international research on particle physics in the same breath as international research on the brain. Nevertheless, for officials at Japan's Ministry of Finance, they are much the same thing.

But at this point, proponents of enhanced support hit harsh reality. In Western eyes, the obstacles are significant. Increased funds would come at the expense of national budgets, given current constraints. Furthermore, why put money into this Japanese-inspired programme when there are already excellent national programmes funding research on the brain and molecular biology?

There is no hard evidence that the research is different or better than would have been achieved nationally. But, in high-energy physics the scale of the technical challenges means that progress cannot happen at all without international collaboration. The Frontiers programme has the regrettable problem that internationalism for its own sake will not cut much ice. Promoters of the Frontiers programme must construct a stronger case than has so far been achieved. □

Joining hands in stormy seas

The health of global fish stocks requires new linkages between fishermen and scientists.

There can be few today who are unaware that fishing is an industry in crisis. A combination of modern fishing techniques and a failure to implement safeguards to keep stocks of individual species at sustainable levels means that the availability of many types of fish is declining. Yet this is happening precisely at a time when demand from a rapidly growing population is on the increase.

Caught in this vicious circle, scientists and fishermen find themselves on opposing sides of a frequently acrimonious debate. Researchers find their frustration turning to despair as solid arguments against overfishing prove ineffectual against a powerful industry. Fishermen facing tough economic realities have no incentive to listen to such arguments, however authoritative.

In such a climate, and despite their high credibility in political circles, scientists shouting even louder seem likely to achieve little but more alienation among fishermen. But other approaches are being experimented with (see Briefing, pages 105–109). Off the coast of

Massachusetts, fishermen are being recruited to participate in research projects aimed at understanding the impact of climatic change, one of the explicit goals being to reduce the friction between the two sides. And there is also a growing debate within the scientific community over whether current research strategies, however scientifically valid, remain the most appropriate for the context in which their conclusions are likely to be used.

There are important parallels between the difficulties of linking science advice and fisheries policy and those of making similar links in other areas (such as food safety or environmental carcinogens). Strategies based on the assumption that good science is sufficient to create good policy will prove inadequate. The way forward is to involve as many 'stakeholders' as possible — including scientists where appropriate — in the very task of formulating policy advice. Flexibility on both sides is required to achieve this; the future of the world's fishing stocks surely depends on it. □