

Chinese hesitancy on avian flu

The time has come for China to start pulling its weight as a participant in the global response to bird flu — and to learn to collaborate more openly.

Beijing is currently undertaking some spectacularly expensive preparations for hosting the 2008 Olympics, and its government officials talk of sending a man to the Moon. But when it comes to the more prosaic matter of taking elementary precautions against the palpable economic and public-health risks posed by bird flu, the world's most ebullient industrial power is pleading poverty.

When representatives of about 100 countries met in the Chinese capital last week to discuss funding for countermeasures to the spread of avian influenza in nations far poorer than China itself, the host country was ready to offer only US\$10 million of the \$1.9 billion pledged in total over three years. China can point to the resource requirements of its own mitigation strategies as a reason for its reluctance to send money abroad. But this explanation would carry more weight if the country had put convincing strategies in place and openly shared information and biological samples with the outside world. So far, it has failed to do so.

Epidemiologists say that the most important initial steps in constraining both the spread of avian flu and its mutation into a strain that could cause a global human pandemic are the establishment of monitoring systems to track the virus in poultry and wild birds, and the rapid diagnosis and follow-up of all human cases. Needy countries at high risk of exposure to the virus, such as Indonesia and Cambodia, urgently require help in setting up such systems.

China has some 14 billion poultry, many of them scattered about in backyard farms in intimate contact with other livestock and people, so it is one of the most likely breeding-grounds for a pandemic virus. Collating accurate information about the virus populations circulating in these birds is a considerable challenge. Outsiders like to accuse Chinese government officials of cover-ups, but the reality is often that the officials themselves don't know what is happening on the ground.

Every nation struggles to align central-government strategy with local implementation, but in China the problem is particularly acute. It has taken years for the government to formulate a response to the HIV epidemic that has been emerging before its eyes. Severe acute respiratory syndrome (SARS) first appeared in China in November

2002, but it took months for Beijing to learn of the problem, acknowledge it and orchestrate a response. And with regard to bird flu, officials last summer claimed to be unaware that the widespread misuse of antiviral drugs by Chinese chicken farmers had already rendered them virtually ineffective (see *Nature* 435, 1009; 2005).

With something that will move as rapidly as bird flu, China needs a surveillance system that brings accurate information to the centre. Once it has that, the information should be shared with scientists abroad. Such sharing of information is another thing to which Beijing has historically been averse. Last spring, for example, foreign scientists were allowed only limited access to sites of early outbreaks of bird flu in western China.

The preferred crisis-response mode of senior Chinese officials, ingrained over decades, is first to identify a problem, then take measures to address it, and only afterwards report the improving situation to the outside world.

The outbreak of SARS was supposed to have demonstrated that this approach is no longer good enough. There are indeed signs that some lessons have been learned. Public-health provision has improved in the affected areas, and investigations into the disease have strengthened some aspects of Chinese biomedical research (see page 382).

In the case of SARS, mainland China eventually shared data on the virus responsible with scientists in Hong Kong and abroad, who were able to identify it and help to develop effective control measures. China should speed up this process for avian flu, making samples and genetic data for circulating strains immediately available. Access to outbreak areas should also be granted to international teams seeking epidemiological data. Data and samples from strains that have crossed over to humans also need to be shared. So far, this hasn't been happening. China's response to bird flu has been a mixture of secrecy and parsimony that does little to serve the interests of its farmers or its people, and is not becoming of an emerging world power. ■

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A firm foundation?

After more than thirty years, a European science agency is struggling to establish a clear identity.

The European Science Foundation (ESF) was born before its time, in 1974 — and has suffered for it. It could have evolved into Europe's answer to the US National Science Foundation, but history decreed otherwise. Instead, it has pottered gently along,

doing small things reasonably well. It has established high-quality research networks and conferences, and has published, on an ad-hoc basis, thoughtful documents on such policy issues as Europe's need for synchrotron facilities. But it has never really established a strong identity, and repeated exercises to carve out a lead role in the fragmented drama of European science have tended to fizzle out.

The latest such exercise, conducted last year at the request of its member organizations, may yet meet the same fate. It produced a somewhat watery-sounding mission statement that the ESF should serve as "a common platform for its member organisations in order

to advance European research and explore new directions for research at the European level". In practice this means little change. But the foundation promises a stronger focus on producing strategic 'Forward Looks' reports, which will analyse Europe's future scientific needs. Another focus will be the management of research activities generated by other organizations, such as the European Commission's Eurobiofund (see *Nature* 439, 244; 2006).

Any grander hopes have been extinguished over the years by the steady expansion of the European research commission, allied with the inertia of the ESF's owners — some 78 national research agencies and sundry academies of science, from 30 countries.

Despite their recognition that basic scientific research needs to be supported at the European level, ESF members failed to deliver the money that it needed to do the job. Given Europe's complex regional politics and the ever-present conflict between national and European interests, it is hard to imagine how things could have turned out differently.

Instead, the commission — whose mission has never directly included basic research — has stepped into the breach. Its vigorous and well-funded programmes for networking researchers, tangled

in red tape though they may be, dwarfed the ESF's efforts. Now the creation of the European Research Council is removing the central project that would have given the ESF its most natural *raison d'être*.

The ESF, whose executive staff of almost 100 are ensconced next to the picturesque canals of Strasbourg, may yet find its forte. If the 'Forward Looks' reports are good enough, they could become influential, like those of the US National Research Council (NRC), which has no European peer. However, the NRC's reputation sits on a firm bedrock of independence — the National Academies — and it has a reliable stream of money to support its large technical staff. The ESF lacks either asset.

Europe has yet to develop a stable system of scientific institutions whose combined authority will safeguard the general well-being of European-level basic research. The ESF's new mission statement is an attempt to identify its place in that evolving system. But its member organizations must remain alert and flexible if the ESF is to remain fit enough to survive. ■

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Warming to economics

Climate research can only gain from closer collaboration with economists.

When a small group of economists first became interested in global warming around 1990, some climate scientists viewed their activities as an unnecessary intrusion. The warming of the planet, they reasoned, was being driven by economic expansion, and action on greenhouse-gas emissions was being opposed by some governments on economic grounds. Why should economists get involved when the future of the planet was at stake?

After some years of mutual apprehension, however, collaboration between climate scientists and economists is becoming widespread (see page 374). There is a growing acceptance on the part of the scientists that economic models are an essential piece of the toolkit needed to predict climate change. And there's an acknowledgement that mitigation actions cannot fly in the face of the considerations that economists probe, such as China's desire to grow and people's desire to drive their own cars. The centrality of economics to decisions in this sphere is neatly encapsulated by the British government's decision to give the Treasury lead responsibility for climate-change policy.

The inclusive nature of the Intergovernmental Panel on Climate Change (IPCC), which is currently preparing its fourth assessment of global warming for publication late next year, has further encouraged economists and climate scientists to work together. The resulting effort has shed useful light on how economic growth, lifestyle changes, international trade, and investment in the energy sector might influence greenhouse-gas emissions. But that's the easy part. The hard part is untangling the impacts of various possible mitigation actions in order to credibly estimate their actual impact on economics, climate and society.

Unfortunately, for the purposes of its impending fourth assessment, the IPCC won't manage to incorporate the economists' latest thinking on these different 'emissions scenarios'. The 'Special Report on Emissions Scenarios' that will accompany the assessment was developed in the late 1990s and rests on a number of assumptions that many economists view as outdated or simplistic.

For example, it assumes direct 'cause-and-effect' correlations between factors such as population growth and technological change, instead of the more complex, two-way relationships that economists have established beyond reasonable doubt. It also makes macroeconomic assumptions, such as a rapid convergence between the per-capita income of rich and poor nations, that ought really to be discarded as wishful thinking.

Common-sense adjustments to the report on emissions scenarios could incorporate the best understanding that we have regarding the interaction of such variables in complex economic systems. They will not remove uncertainty, which is fiercely ingrained in economics. Increasingly empirical approaches to economic assessment and modelling, many of them borrowed from the 'hard' sciences, will, one suspects, never lead to a mechanistic understanding of economic forces. The development of such approaches is welcome nonetheless, and has an important role to play in the assessment of emissions scenarios.

The IPCC has initiated the development of an improved set of such scenarios for completion by the end of the decade, in time for incorporation into its fifth climate assessment, due in 2013. Such are the slow wheels of progress at an organization designed to forge painstaking consensus. The delay need not undermine the authority of the IPCC's work, but it will doubtless lend ammunition to its vocal and well-financed critics when the fourth assessment is released. ■

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