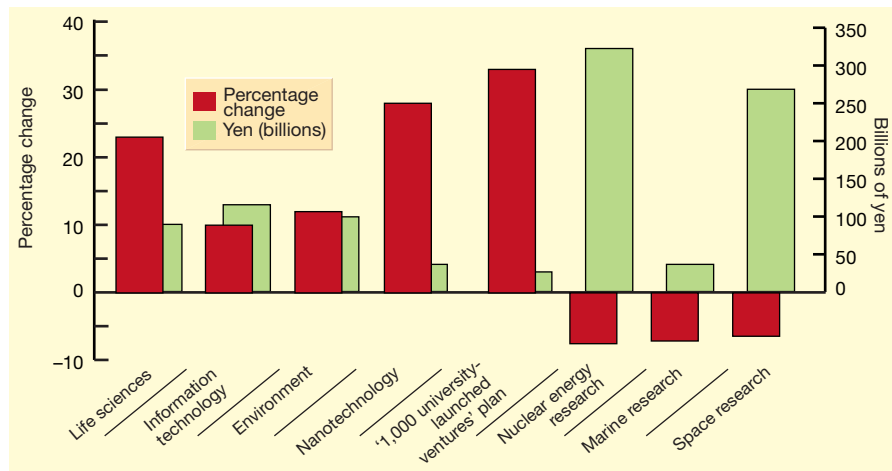


Japan sets focus on critical areas and economic pay-off



A question of priorities: proposed spending for the next year will bring winners and losers.

David Cyranoski, Tokyo

Japan may be mired in a recession, but the slump won't stop its efforts to compete internationally in fields of research that it deems to be strategically important.

That is the central message of the budget for the fiscal year starting in April, which was released last month. The budget boosts research in nanotechnology, environmental sciences, information technology and areas of the life sciences that have been designated as national priorities (see graph).

But with the overall research budget growing by only 2%, other fields, among them marine science, nuclear energy and space research, will suffer cutbacks.

And the budget comes with strings attached, as the government tries to make sure that its spending on research yields economic benefits. The Ministry of Education, Culture, Sports, Science and Technology (MEXT), for example, is to set up a team of patent lawyers and researchers whose remit is to ensure that the protein research supported by MEXT yields new patents.

"It's not something we're happy about," says a researcher at the nuclear magnetic resonance facility in Yokohama, which is run by the Institute of Physical and Chemical Research (RIKEN). "But that's how the money comes." Another researcher there adds: "It's a lot of pressure."

Researchers are increasingly aware of the expectations for them to produce applicable research. MEXT and the Ministry of Economy, Trade and Industry plan to invest ¥248 billion (US\$2 billion) — an increase of 28% on this year — in technology transfer. Their plan includes a target of creating 1,000 start-up companies over the next three years, based on university research.

Among projects that are affected by cuts in

the budget is the Institute of Space and Astronautical Science's Venus mission, which aims to pierce the planet's thick clouds with infrared lasers to investigate its atmospheric conditions and volcanic activity. It will get only 10% of the ¥1 billion requested by the institute, and its planned 2007 launch is set to be deferred. "Existing projects and those with international commitments are protected, but it will be very difficult to start new ones," says the institute's deputy director, Toshio Matsumoto.

Several research institutes will also pay the penalty for their status as 'special public corporations' (see *Nature* 414, 833; 2001). The government intends to restructure these, and is imposing budget cuts of around 10%. "The government is boasting of a budget increase for science, but that excludes us just because we are a 'special public corporation'. It's incomprehensible to me," says a senior researcher at the Japan Marine Science and Technology Center in Yokosuka. Operation of a new ocean-drilling ship, due to begin in 2006, will probably be delayed as a result.

RIKEN, another 'special public corporation', will have its budget cut by 9%. Major projects, including a proposed radioisotope-beam facility at Wako, northwest of Tokyo, will be the main casualties. RIKEN vice-president Tomoya Ogawa says that the facility will probably be delayed by "a few years".

Some research administrators are accepting such reductions more stoically than others. Japan's High Energy Accelerator Research Organization (KEK) will get extra money to build a 50-GeV particle accelerator, whereas the rest of its budget will fall by 5% — after a 10% drop this year. But KEK director Hirofusa Sugawara claims that the cut will not damage research, and that he plans to hire staff. "We expect a wonderful year," he says. ■

Space agency pulls the plug on astrometry mission

Tony Reichardt, Washington

A NASA mission that was to have measured the positions of stars with unprecedented accuracy has been cancelled because of cost overruns and problems with its detectors.

The Full-sky Astrometric Mapping Explorer (FAME), which was selected in 1999 as one of the agency's medium-sized Explorer missions, was due to launch in 2004. It would have mapped the positions of 40 million stars with 20 times the accuracy of Europe's Hipparcos mission, the best existing astrometric survey undertaken from space.

NASA wrote to FAME's principal investigator Kenneth Johnston, of the US Naval Observatory in Washington DC, on 4 January, saying that it was withdrawing its support because of growth in the project's estimated total budget from \$180 million to \$220 million. The agency also cited difficulties in obtaining charge-coupled device (CCD) detectors for the mission. The manufacturer, Scientific Imaging Technologies of Tigard, Oregon, has had trouble producing CCDs to the required specifications, Johnston says.

Project managers had already scaled back the mission, and Johnston offered to try to obtain further funds from the Navy to ease the cost overrun, but NASA saw too much risk in continuing with the mission. "There's a real problem at NASA headquarters with budgets," Johnston says. "They have to do something. We just happened to be in the wrong place at the wrong time."

FAME's cancellation leaves a gap in astrometry missions. NASA's more sensitive Space Interferometry Mission will not be launched until 2009, and Europe's proposed GAIA mission is itself in jeopardy and in any case is not scheduled to begin until 2011 at the earliest (see *Nature* 414, 383; 2001). Robert Reasenberg of the Harvard-Smithsonian Center for Astrophysics, a former project scientist for FAME, laments the loss of the science, but agrees that NASA has to take action to rein in projects that are running over budget. "If I were starting a programme now, this decision would loom pretty large," he says.

Johnston confirms that the mission had problems procuring the CCDs. "CCDs sound like they're off the shelf," he says, "but it's not a guaranteed process."

Johnston still hopes eventually to secure funding from NASA or the Navy, although he admits that it's a "big mountain to climb". ■