SCIENCE POLICY RESEARCH IN SOUTH AFRICA

Ania Grobicki

What I'm going to talk about is actually quite difficult to engage with in the general sort of issues that are taking up the time of this conference. There has not been a great deal of policy research done in the area of science and technology. In fact, the whole area of science/technology policy has only been raised since about 1990. But this is not to say that technology hasn't been called in as a black box in the study of various sectoral areas. However to see science and technology in thematic issues that run through society and the economy is actually quite a different approach.

So I'm not going to talk about policy research. I'm also not going to talk a lot about the ANC Science and Technology Group and about how it's structured, how it functions, its relationships, etc. I'd be very happy to open that up in discussion with people afterwards. What I do want to talk about is the actual field itself, and to see if that can engage with people here in some way and raise some questions afterwards.

My main argument is that state policy around science and technology at the moment is one of decentralisation / fragmentation. There have been very radical shifts in state policy and one of the problems that we have within the ANC Science and Technology Group is that a lot of the time we're aiming at a moving target.

The vast majority of science research in South Africa is state controlled. In financial terms, over 80% was ultimately state controlled. With the current policy of privatisation and autonomy for the research councils, that is decreasing.

I think it's important to bear in mind that state control has been a fundamental basis of the whole system of science and technology in this country. White South Africa is quite a curious anomaly in being a highly technocratic culture, with very clearly defined technical goals which have resulted in spawning all these parastatals such as SASOL, MOSSGAS, ESCOM, ISCOR and what have you. The very pure base strategies were articulated, because there was an assumption of a unified task and a unified group to carry it out.

I think things have shifted very rapidly, and given this sort of radical policy-making that the government is capable of, in the 1980s the policies in science involved (in intellectual terms) incredibly radical shifts in the scene. So, for instance, the CSIR as we saw yesterday has now got the second highest proportion of private research contracts in the world, second only to Holland. The FRD, in 1984, shifted to funding in terms of individual excellence rather than funding on the basis of research areas and research priorities. That is the most radical system of funding allocation in the world in terms of science and technology.

For universities as well, although I haven't had time to check the figures because I only received the information quite recently, it seems that South African universities are currently second only to Japan and the United States in the proportion of

non-state funding that they have to live on. This was an FRD statement; it may not be true; it's something that I'm quite keen to check out.

I want to stress the point that research policy has been a field that has been taken up in science and technology perhaps more than in the social sciences, perhaps because research underpins science and technology to a much greater extent. It fundamentally underpins the whole area. There are much larger resources required for that type of research in terms of equipment, instrumentation and expertise. As a result, it's quite a well-developed area, so there is actually a journal called *Research Policy* which deals with science and technology issues.

As a result, there has been quite a well-developed system of research foresight internationally which has generated a lot of debate. I won't have time to go into detail about it here, but I think we can take it on very usefully in South Africa as a way of setting national priorities involved in this area. In this sense, we're not talking about technological forecasting or research forecasting, but really research foresight, which needs its own mechanisms and institutions to bring about. I think, in the past in South Africa, we really have moved from one extreme to another, where for instance the establishment of the Atomic Energy Board was decided in conversation between two people - Roux and John Vorster.

Democratising that decision-making process is going to be an enormous leap. It's quite difficult even to get people to take on these issues and to take them up.

My problem is that there is really no conceptual map of the scope of research that is being done in South Africa. I think it would be very important to establish, at least as a basis, a directory of the research that is being done in various areas, with an estimate of the amount of resources that are being spent on each area. That information at the moment is not available.

Because the whole system has been so fragmented in terms of focusing on individual excellence in the last few years, we have a huge gap in terms of the individuality and the conservatism of the research community. I think this is important because I'm not saying that scientists and engineers are the only people who determine science and technology policy; far from it. But scientists and engineers are a very essential community to the society and the country, and their attitude and their concerns have to be taken on board.

So there is a need for people to understand the process of policy formulation and to come to some type of strategic understanding of science. There are both internal and external reasons for this. Internal reasons, such as increasing levels of technical and intellectual complexity within science and technology. There are many new disciplines arising all the time as well as multidisciplinary areas arising. The external causes are the political and budgetary constraints on the science system. None of this has been explicitly formulated yet in South Africa.

I think there are enormous possibilities which are opened up in this process, particularly in terms of the whole debate around gender and expertise, the role of technology in women's lives. There is now really an opportunity for the science and technology system to be impacted upon by ideas which are formulated in other sectors of research. There is a curious anomaly that, in terms of education of students,

science and engineering education is undervalued compared to the social sciences, if one takes an international cross-cut of the proportion of university funds that are spent on social sciences, professional and vocational training, and science and engineering.

So I think the problems of the science community in this country have been isolation, insularity, and an enormous lack of vision. There is now a process of reorientation taking place which I think does provide a lot of possibilities. There is a motivation to change, and at the same time an extreme wariness. I think that the recognition of the importance of policy making processes and of participation in policy making processes gives us enormous hope, that there will be some basis for establishing national priorities in a democratic South Africa.