

## SUMMARIES OF MB PRESENTATIONS

### **Martin Bell: Developing African STI Indicators for African STI Policy**

One type of STI indicator is well-known: the type that is based on national level government supported R&D Surveys and Innovation Surveys based on the Frascati and Oslo Manuals. But these are the tip of the STI indicator iceberg that also includes many other kinds of STI indicator. These are developed and used in many kinds of analysis by research institutes, groups and individuals – case-studies, small sample surveys and large-scale surveys.

This ‘bottom-up’ and endogenous process of indicator development, occurring primarily in the advanced economies, has created the STI indicator ‘technology’ embodied in the Frascati and Oslo manuals and their procedures. But another type of process, currently being experienced in many African countries, has relied more on a ‘top down’, international transfer of STI indicator technology. That process is extremely efficient. It can also be very effective in supporting policy in areas where the transferred system of indicators reflects policy issues that are similarly important in both the source-societies and the technology-importing societies in Africa. When that matching between the imported indicator systems and African policy needs is not adequately close, modifications can be developed (e.g. as in Annexes to both the Frascati and Oslo manuals) to increase usefulness without compromising key features such as international comparability. However, in some situations important aspects of STI activity may not be covered at all effectively in existing indicator systems, and the mismatch is too wide to be covered by such supplementary modification.

One example is the inability of existing systems of agricultural innovation indicators to reflect important aspects of the many experiments that have been made over the last 20-30 years to develop and implement new modes of ‘participatory/grassroots’ innovation. Without a significant effort to build up a body of policy-supporting indicator-based analysis in this area, policy-makers can do little but ‘fly blind’ in this area of innovation policy – or, more likely, to bypass it because it is not even visible on the policy agenda.

### **Martin Bell: The Significance and Role of Design and Engineering in Developing Country Innovation Systems**

The activities of design and engineering (D&E) play several key roles in innovation systems: implementing innovation, linking R&D to implementation and articulating effective demands for new knowledge from R&D. Fragments of data from a few advanced countries suggest that the quantitative scale of D&E activities is greater than the scale of R&D, and this disparity is probably greater in developing economies. But very little information is available about them and their role in the economy – for example, they are not covered by R&D surveys (Frascati) or Innovation Surveys (Oslo).

But the sectoral structure of growth in African economies, especially in East Africa, is heavily concentrated on sectors that are strikingly D&E-intensive. This poses challenges for totally new perspectives and orientations of STI policy. Since there is almost no basis of policy analysis and indicators to support such policy, there is a corresponding challenge for policy analysis by Globelics/Africalics members. Several questions to address are outlined. Some of these are about developing basic descriptive indicators of things like the magnitudes of design and engineering activities, their roles in innovation systems and the actors involved. Others are about indicator-based policy analysis in areas like capability creation in design and engineering, or the interface with R&D. Yet others are more about the necessary organisational basis for policy making – about cross-cutting policy-making structures within national governments and probably also about cross-country structures in East Africa.