

THE ROLE OF SIDO AS A LINK BETWEEN TECHNICAL RESEARCH AT THE UNIVERSITY AND INTRODUCTION OF NEW TECHNIQUES IN RURAL AREAS

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SIDO, since its foundation in December 1973, has justifiably or otherwise, had a lot of hopes pinned on it as a source of some technological rethinking, a sort of alternative to the prevailing ideas in the country about what development means in the technological terms.

This has arisen first of all because of the general terms of reference of the organization, particularly its mandate to promote industrial activity in rural areas, and secondly because it has had to work very hard as a new group within a fairly extensive and well established bureaucratic apparatus, to define exactly what its terms of reference should mean in practical terms. This has resulted in a relatively extensive search for ideas.

The University, especially via the engineering faculty, I.D.S. and the agricultural engineering department in Morogoro, has similarly turned its efforts to problems of technology in rural areas relatively recently.

Within the limits imposed by the need to work within the existing apparatus, these two institutions have therefore tended to find themselves recently fairly frequently linked in general or in specific instances in their work, at least at the research and development stage. Both institutions require close contact with the realities of the rural economy, SIDO because it is set up to do so, the University either because of some internal efforts at reform or external prodding, in order to try and change it from European type academic institution serving the educational government or industrial bureaucracy, to a more practical organization involved in national development especially in rural areas.

It seems well to begin by stressing the fact that SIDO is a small organization with limited material resources. Although

* SIDO = Small Industries Development Organization

it has special terms of reference to promote small-scale industrialization, currently it is really in effect just another organization in the field. For example, the combined efforts of parastatals, D.D.C.'s, Coop. unions, prisons, U.W.T., T.Y.L., national service and village cooperatives, at this moment would far outweigh anything that SIDO could do in the field. It is these institutions which are to be the controllers of industrial development now and in the future.

In India, industrial extension services started under state directors of industry in about 1918. By 1948, when the central government set up the S.S.I.D.O., there was already an extensive small-scale industrial base, as distinct from traditional cottage industry. Currently, at national and state level there are roughly 17,000 workers involved in technical extension work alone, and when administrators, planners, and other staff are included, the figure is probably around 50,000 employed in S.S.I.D.O., coir board, handloom board, all India handicrafts board, silk board, and Khadi and Village Industries Commission. The administrative budget of S.S.I.D.O. alone is Shs. 40m /= per year, excluding expenditure on machinery, equipment etc.

Promotional capacity in Tanzania is not only minute in comparison but may well never expand on this scale in the future either, due to the fact that the structure of the economy and level of under development of industry in Tanzania now is quite different from that of India, and the political and organisational apparatus is supposedly aimed at direct structural change rather than extensive 'services' and protection to industry.

What will happen is that SIDO picks out areas in which direct contributions may be made. One of the main programs under evaluation at present is a series of pilot industrial projects, especially in food processing, building materials, textiles, and machinery, and equipment. The latter entails mechanisation manufacturing agricultural and equipment, transport and processing equipment, metalworking equipment, tools etc.

It is in this last area that the participation of University engineers may be especially relevant.

One of the principal requirements before setting up these mechanical workshops will be to collect data, develop and test simple equipment and machinery for potential commercial manufacture.

The role the University could play may be illustrated by reference to a particular example of equipment, for example an oil crusher, water pump or a pedal-operated grain thresher (amongst other items) which are being developed at the agricultural engineering workshops in the Faculty of Agriculture, Morogoro.

The first stage involves identifying and building suitable equipment (preferably several alternative designs). In the case of the thresher, an existing Japanese model has been acquired for duplication or modification, though cheaper materials plus the pedal unit have been added. A design allowing exchangeable drive units (manual, pedal, diesel engine etc) may be worthwhile, construction takes place at SIDO workshop or University or other training institution.

Stage 2 involves finalising and starting experimental tests of a few models in the field. At this stage direct contacts with villages or other locations begins.

This may be a good prospect for vacation field extension work; e.g. students may be sent to install, monitor and evaluate the performance of the machine, its productivity, and its effects on the work pattern of the community which is using it.

Later on field work will also involve assembly of equipment on site and training in assembly and maintenance.

Stage 3 involves finalisation of design choice, if the field trials have been successful. It will also involve recommendations on pricing, taking into account the productivity of the equipment. If the trials are unsuccessful, modifications may be made, further trials carried out, or the project abandoned.

Stage 4 involves recommendation to SIDO (or any other appropriate institution). At this juncture SIDO takes up the issue with financing and supply organizations (T.R.D.B., A.I.S.C.O. etc) if the trials have been successful and it has been established

that an adequate market exists at least for a limited production run. SIDO now also arranges manufacture.

Stage 5. Manufacture of a first trial batch is arranged either at one of SIDO's proposed mechanical workshops, an engineering firm, or, conceivably at a production workshop attached to the University or other technical training institution (trade schools, T.A.M.T.U., Azimio Cottage Industry Training Centre etc.). Financing and market (government contract arranged).

Stage 6. Depending on success of stage 5, expansion of production occurs. SIDO coordinates supply, finance and marketing (via government contract or possibly via open market, R.T.C.'s etc.).

This process may be regarded as one way in which the University could be formally linked to the production process.

There would be two main areas of relevance for the University:

Identification, selection, design, and building of suitable equipment.

Extension work in villages.

The identification process and the organization of extension work itself requires close contact and a carefully worked out approach to the problems of the people who are supposed to benefit from the development work. Our approach should be to make life a bit better for people in the rural areas. We know they have need for better or more food, water, clothing and shelter. We should therefore address ourselves seriously to these basic problems of the people in our research endeavours. If this project, or series of projects was to prove successful, it is likely that more extensive integration of the University into the realities of the development process could evolve.

SIDO pilot projects could potentially absorb University research and development workers, and general technical advisory services and 'fire brigade' machinery repair and maintenance work in existing small plants could use the services of engineering students on a part-time basis.