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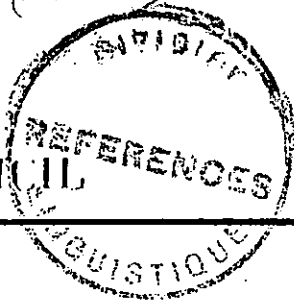
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INSTITUTIONAL COOPERATION

by Ian Brook

SWEDSURVEY
NATIONAL LAND SURVEY OF SWEDEN

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A fundamental requirement for a national development strategy is an effective mapping programme. Information about the physical environment in the form of remote sensing imagery, coordinates, maps, digital data, cadastral data and land-use information is a basic tool in the planning process. The orderly exploitation of natural resources, forestry and agriculture development programmes, erosion control, transportation, urban and rural planning, environmental control, telecommunications, are examples of activities which are, to a high degree, dependent upon the availability of up-to-date, reliable base data.

During the Colonial Period, surveying and mapping activities were generally given high priority. This was for a variety of reasons. The very excellent work carried out by, amongst others the British Directorate of Overseas Surveys during the post-war period, particularly in Africa, has greatly contributed to development in many countries through the provision of basic mapping thereby helping to put many of these countries on the road to being able to initiate ordered planning activities. With the present tendency towards a decrease in surveying and mapping support of this type there is a risk that a vacuum will be created.

Within many developing countries as a result of the general world economic recession, surveying and mapping run the risk of becoming the poor child of the family. It is, however, during such periods that planning for the future must be initiated. Presumably this vacuum will be partially filled by surveying and mapping experts, many of them recruited and financed through U.N. channels. Without underrating the role of the expert, we feel that in the rapidly changing world of

surveying and mapping, other approaches should be studied.

Experience has shown us that, even after a very short period the expert tends quickly to lose contact with the parent organization and tends to either become isolated or burdened with tasks both within and outside his area of competence by the recipient organization. This results often in a feeling of helplessness and disappointment at not being able to achieve tangible results. There is always this latent risk that the role of the expert will become static instead of flexible and progressive. In the increasingly technically complicated surveying and mapping process it is, indeed, unreasonable to expect an expert to have the time, energy and competence to effectively cover more than a narrow band of activities. What in fact, is often needed is not a single expert but several persons, capable of working together and each with experience and knowledge from separate fields which together cover a wide spectrum of activities ranging from research and development to technical implementation. Needs can range from short term - a number of weeks - to long-term missions involving a year or more.

Our experience is also that the interest for long-term assignments is decreasing. Furthermore, parent organizations are frequently unable or unwilling to release senior staff for one or two years. The best are needed both at home and in the developing world.

One way to solve this problem is to offer survey organizations in the Third World the full services of a sister surveying organization in a developed country in the form of institutional cooperation. All countries in the industrialised

world have survey organizations with a high level of competence, instrumentation and techniques. In many cases there is certainly both interest for and a capacity to participate in this type of cooperation. Short term assignments can be accepted by the parent organization and the sister organization will have access to a range of specialists in many fields.

The National Land Survey of Sweden is, through its overseas agency Swedsurvey, cooperating on an institutional basis with a number of countries in Africa south of the Sahara.

The National Land Survey is Sweden's national surveying and mapping authority and is a relatively large organization with a total staff of 2 800 and an annual turnover of 80 000 000 USD.

The Land Survey is responsible for a wide range of activities from the "core" activities such as national mapping and responsibility for the fundamental geodetic networks to supervision and much of the implementation of cadastral activities as well as a range of repayment services.

The Land Survey has resources which facilitate a continuous exchange of technical information which make it possible, at short notice, to make personnel of the right category available; and a generally flexible back-up and service is always available. The cooperation is carried out on a non-profit basis as a repayment service financed either by the recipient country, through the Swedish International Development Authority or through other aid sources.

Our institutional cooperation activities have been concentrated to four main areas of activity

- technical assistance
- consultancy
- training
- provision of information on and assistance with the purchase of equipment, assistance with repair and servicing of equipment.

Technical assistance has included doppler observations, primary levelling using motorised methods, heighting programmes for topographic mapping, aerial photography and cadastral surveys. Swedsurvey has also provided computational services. Each project has been supervised by a Swedish specialist assisted by one or more local counterparts. In all technical activities an important component has been on-the-job training and transference of technological information through direct participation in joint activities.

Consultancy has included programmes for manpower planning, restructuring of cadastral activities, reorganization and rebuilding of reproduction and photographic laboratories, reformulating of Survey Regulations, planning of ground control, the preparation of educational programmes and the introduction of improved methods and modern materials.

Training programmes and assistance with the provision of teachers have been arranged for draughtsmen, for computing office staff in connection with the introduction of computers, for computer programmers, for field staff in connection with the introduction of EDM, for cadastral office staff in connection with the introduction of new routines.

As far as possible, training programmes have been carried out in the recipient countries; but study visits have also been arranged in Sweden. Technical manuals have been written for the training courses.

A flora of equipment and materials for surveying and mapping purposes is now available on the international market. The problems experienced in a developing country can range from a dearth to a flood of information. Swedsurvey has assisted by collecting, evaluating and disseminating information on new equipment and materials. Assistance has also been provided by purchasing equipment to avoid cumbersome and time-consuming local purchasing routines. During the years many example have been seen of poor investments due to a combination of lack of information and high-power salesmanship. Many sensible investments have not succeeded in generating planned returns as a result of poor utilization and lack of service and maintenance.

Lack of spare parts is often a chronic problem in technical activities in the Third World. Swedsurvey has provided back-up by making spare parts and service facilities quickly available. Manuals covering calibration and measuring routines have also been written.

Two African countries in which Swedsurvey is engaged in institutional cooperation programmes are Ethiopia and Zambia. In both cases the Swedish International Development Authority, SIDA, is providing financing. Many of the on-going SIDA projects benefit significantly from the availability of reliable land information. As this Conference is being new in Ethiopia

present cooperation between our two countries as an example.

Ethiopia is a very large country with an area of 1,2 million square kilometres. Potentially the country is rich in natural resources and there is a huge dammed-up need for land information. Of the order of 1800 map sheets at a scale of 1:50 000, which is the basic scale, will be needed for complete national coverage. At present only approximately 300 sheets have been completed and published.

Towards the end of the 1970's the Ethiopian Mapping Agency had assumed full responsibility for surveying and mapping activities and was engaged in building up both manpower and instrument resources. At this critical stage of its development the Agency was faced by an explosive increase in demand for maps and mapping services. Institutional cooperation with Sweden began in 1980 and together significant steps have been taken towards the development of a fully professional, self-reliant mapping organization. During this period

UNDP has also made very significant contributions to the Mapping Agency and it has been possible to dovetail the Swedish and UNDP programmes into each other. Swedsurvey's technical assistance has included combined laser Geodimeter traversing and doppler surveys to rapidly extend the fundamental geodetic network, scale checks, assistance with the establishment of ground control for 50 000 mapping and other large scale mapping programmes and in-the-field training of Ethiopian counterparts in survey management techniques.

During the fiscal year 1986-87 the Ethiopian Mapping Agency plans to produce and print fortyfive 1:50 000 map sheets. This figure should be compared with the ten sheets produced in 1981. To reach this level after six years is, I feel, a most significant achievement.

During the past six years Swedsurvey has provided computer facilities in Sweden for carrying out geodetic and photogrammetric adjustments. This year, however, a micro computer will be installed at the Agency which will result in independence also in this field. Training and software will be provided by Swedsurvey.

Since 1980 our aircraft have photographed over 120 000 sq. kms. Initially all films were developed and contact prints made in Sweden. As a result of on-the-job training in Ethiopia and Sweden, EMA can now provide these services to Swedsurvey on a repayment basis. During the air photo season

which is at present in progress, of the order of 140 000 sq. kms will be photographed at various scales for national mapping, railway development, irrigation projects, fuelwood projects and land use and forestry projects. EMA staff will develop over 120 rolls of film and produce over 30 000 contact prints and derived products.

Consultancy has been provided in many fields both technical and administrative: from the planning of geodetic networks to stores management.

Transfer of technology has been a fundamental component in our cooperation and is a prerequisite if Swedish aid is to be provided. Sweden cannot provide formal training. Instead, efforts have been concentrated on providing practical training, often as a complement to formal training, through working side by side with Swedish counterparts, at many different levels, both in Sweden and Ethiopia. The results have been very encouraging.

As was stated above, the lack of instruments, spares and materials is an ever present problem for most survey organizations in the Third World. To maintain a production flow reasonably free from bottlenecks, assistance has been provided in good time for the selection and purchasing of films, printing paper and inks, cartographic materials and many other expendable and non-expendable items. Here also, UNDP and Swedish contributions have complemented each other.

It is easier to offer assistance than for the recipient to make efficient use of it. An organization must be built up to time and coordinate joint activities. From the very begin-

ning, our co-operation has functioned excellently. Each year's activities are based on an agreed work plan and an agreed budget are evaluated at the year's end.

The traditional expert, naturally, still has an important role to play in the process of development; but I am convinced that institutional cooperation represents a further step forward in an efficient transfer of technology and is a very effective way of utilizing ever-dwindling funds.

Institutional cooperation on a government to government level is, we feel, a guarantee for stability, objectivity and continuity and an effective way of providing assistance to an important area of activity.