

The work of GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit GmbH)

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GTZ is an implementing agency which operates within the development policy formulated by its owner, the German Federal Government. It was set up in 1975 to improve the state of human existence in the developing world. It has a general agreement with the German Federal Ministry for Economic Cooperation and Development (BMZ) under which it was assigned responsibility for implementing technical cooperation activities, in partnership with other governments and international organisations. In addition it supports development on behalf of other German government departments. The GTZ operates on a public benefit basis. Any surplus generated is used for purposes related to development.

The GTZ operates in more than 120 countries, with experts and management personnel working in administration and project service offices as well as in the projects themselves. It has three decades of experience in tailoring solutions to the specific problems in partner countries.

GTZ services include:

- providing advice to organisations in partner countries on the planning, implementation and assessment of their projects and programmes;
- selecting, preparing and assigning expert personnel and attending to their professional and personal welfare during their period of assignment;
- planning and implementing project oriented training and upgrading measures;

- specification planning and procurement of materials and equipment for the projects;
- granting non repayable financial contributions from technical cooperation funds.

It is important not to be over ambitious when working with partner governments in planning projects and defining objectives. GTZ has developed appropriate joint planning instruments, starting with the general orientation phase. This offers partner countries planning advice to assist them in designing a realistic project. The ZOPP (objectives oriented project planning) system has been integrated into a management concept. Similarly, participative methods of data collection and evaluation are used.

The assignment of experts must be done with care. Many local specialists in partner countries already possess sufficient expertise to develop appropriate solutions, and it is important to foster and use these skills.

The GTZ structure includes departments dealing with Finance, Management, Manpower and Commercial Affairs as well as the Planning and Development (P & E) departments which provide the professional input to the country departments which are responsible for implementing the activity in the respective countries. In the prosthetic field the Planning Department is P & E 412 — "Health, Population and Nutrition". This department, staffed by experienced, skilled professionals, has more than 25 years experience in the field of rehabilitation and technical orthopaedics for physically handicapped people. Projects have been instituted in Guyana, Tunisia, Egypt, Jordan, Togo, Tanzania, Zaire, Turkey, Pakistan, Armenia, Kazakhstan and more recently, China, Vietnam and El Salvador.

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Over the years the GTZ policy has shifted from direct fitting services to the expansion of projects and the development of techniques and technologies appropriate to the various countries. For this reason, GTZ devised a training system for the developing world which provides adequately trained professionals for whom there is always a need. However, other aspects of care included in the GTZ planning are:

- the concept of the clinic team;
- the need for rehabilitation on a national basis;
- the need for long term existence and survival of orthopaedic workshops;
- access to existing services for all disabled;
- cost calculation;
- staff development;
- quality assurance;
- materials and component production and supply.

There must be close collaboration with the host country, who must have the political will to succeed, if the aims of the project are to be achieved, and survival assured. GTZ's role is to support the local activity with advice and expertise.

The stages in project planning are:

- project idea;
- request for support;
- first technical evaluation;
- planning meeting of local and German experts.

The operation and planning of a GTZ project can be illustrated by an account of their involvement in China. At the request of the Chinese Government, the Federal Republic of Germany is assisting through GTZ in organising a Training Centre for Orthopaedic Technologists in Wuhan (CHICOT). Wuhan is situated on the Yangtze river and is the capital of the Hubei province whose population is 62 million.

The school is a Central Government Pilot Project intending to improve the care of physically handicapped people in several ways:

- training the mid-level qualified prosthetics and orthotics professionals;
- upgrading the 1400 self-trained prosthetics and orthotics workers to a higher level, with a final examination leading to a national certificate of competence;
- allowing more citizens access to prosthetics and orthotics services by improving the technology;
- reducing the costs for patients attending for prosthetics and orthotics treatment by providing accommodation;

- to advise the Ministry of Civil Affairs regarding prescription, quality control, team work etc;
- organising "workshops" and seminars on special fitting techniques. Hand orthoses, the orthotic treatment of paraplegia and silicone roll on sockets have been the subjects of such courses in the last year.

The four year training is based on the recommendations of ISPO and WHO. External examiners from the international community will take part in the examinations ensuring a standard in Wuhan which is consistent with that of training schools in other countries. This will enable external students to gain recognition of their training in Wuhan. The local staff will also benefit from professional contact with the external examiners.

The clinical work is central to the training. The school has a relatively large fitting and workshop area and permanent staff. It is now in the second year of operation and the workshop is treating about ten patients per week, providing:

- lower limb prosthetic services, mostly for trans-femoral amputations;
- upper limb prosthetic services;
- lower limb orthotic services for polio, stroke and paraplegia;
- spinal orthotic service, mostly for scoliosis.

At present we try to bring in cases who present fitting problems so that we can demonstrate proper techniques to other factories and centres, as well as providing clinical training for the students. The work is based on those techniques used in Germany, for example trans-femoral socket shapes used are the German socket as well as flexible techniques and some ischial containment sockets. CHICOT has produced guidelines for dynamic alignment and also a formal written record of check-out to be kept in the records.

In China there is little contact between medical services and technical fitting centres, and so there are problems associated with poor stump shape and preparation, and there is usually little possibility of stump refashioning. The school is attempting to organise training seminars for medical personnel, with so far, little improvement.

Every province in China has one central prosthetic factory usually situated in the provincial capital. Some of these factories also

produce components which result in a large number of locally produced components being available in China at reasonable cost. However, the quality of the components vary, some factories try to reach an ISO standard, but others are inferior, with no great incentive to improve as the expectation of durability of a prosthesis is fixed by the Ministry at 2-3 years.

In China, as in other countries, the majority of amputees are denied access to prosthetic fitting because:

- they have no cost carrier, and they may be unable to afford to purchase a prosthesis;
- the prosthetic fitting centres is far away with inadequate or expensive systems of transportation.

CHICOT initiated two projects to try and improve matters as part of the assignment agreed by both governments:

1. The polypropylene prosthesis, as used by ICRC in Ho Chi Minh City in Vietnam, was introduced. The rural population liked it but the urban amputees did not accept the shape nor liked the hard socket. A soft leather socket has proved more acceptable in the humid climate of Hubei Province. The use of polypropylene has resulted in a saving in cost of 10-30% against that of the Hubei steel and plastic "low cost" prosthesis. In

addition the new type follows biomechanical principles and its durability is greater.

2. To reduce the additional costs of fitting for travel and accommodation which the patient has to bear. For example, three visits from Xiangfan plus living costs in Wuhan can cost Y 1272. The price of a low cost trans-femoral prosthesis is Y 1500. By using the IPOS CASCD system we are able to fabricate the prosthesis in Wuhan from measurements taken in Xiangfan and sent by fax. The prosthesis is finished with a shaped foam cover and sent out by mail. Some 85% of the prostheses produced in this way have not required any further adjustments. The socket shape provides greater comfort than those sockets produced to individual casts taken by inexperienced craftsmen. At present we can make 5 or 6 sockets per day, and are starting a new trial supplying prostheses to the University Institute in Beijing.

This project of using CAD CAM techniques to improve socket and alignment will, if successful, reduce direct costs to patients by providing the prosthesis locally, and overcome the lack of skilled manpower.

The results of CHICOT's work will be documented and made available to all those engaged in prosthetic supply in China.