

3-1-1989

Regional cooperation in the transfer of management and technology - Shangai Seminar

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Moding, Philip, "Regional cooperation in the transfer of management and technology - Shangai Seminar" (1989). *WMU in the News*. 338.

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Philip Moding, INTA/Shanghai Seminar-March 10-15, 1989

Regional cooperation in the transfer of management and technology

0. Abstract

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Abstract

Even local and regional authorities in the most developed areas of the world have a responsibility to promote transfer of technical and other forms of know how to the developing countries. With three examples I want to present how our region is realising such ideas in practical terms. My examples are the establishment of a UN-university, the World Maritime University (WMU) in Malmö with a strong and goal oriented approach. The next example is how the highly developed waste management of our metropolitan Co SYSAV, (owned by our nine communes) is involved in the transfer of know how to many countries including China; and the third is a "Twin Sister Industry project" transfer between small scale industries of southern Sweden and Zambia. In Zambia we are just trying to use the new methods, described in this paper.

The role of local authorities in Scandinavia

Just to shorten my geographic background of southern Sweden in northern Europe I will refer to a short brochure. We are living in an area with perhaps the most developed infrastructure in the world, and with a public sector the biggest in the capitalistic world. Local authorities and local democracy are, since a long time back the foundation stones, of our Scandinavian society. Municipal councils in Scandinavia enjoy a great deal more political and economic power than their counterparts in the rest of Europe, and the world. A Swedish commune - all our local authorities are called communes (kommuner) and have the same status formally, from the biggest, Stockholm to the smallest. A Swedish commune has an enormous freedom. It is free from asking the central government for permission to raise taxes. Each commune has the right to decide on local taxes. Most Swedish communes take around 30% of your income in local tax.

Closest to continental Europe our southswedish communes and regions are very eager to keep and improve our contacts with our neighbours in northern Europe. The Danish capital Copenhagen can be seen from our windows in Malmö when the weather allows. The German, Polish and Russian coast in the Baltic are closer physically to us in Malmö than Stockholm, our capital. The enormous problems facing the developing

countries are concerning many Scandinavians to day. Around one % of the Swedish GNP is bound for funding the Swedish contribution to improve the development in the developing countries. Most of it is administered by SIDA, the Swedish International Development Agency. SIDA is involved in my following cases A and C. Normal international aid is a responsibility of the government not the communes. But Swedish communes are nowadays allowed to take part in export of products and services from the communes and the state.

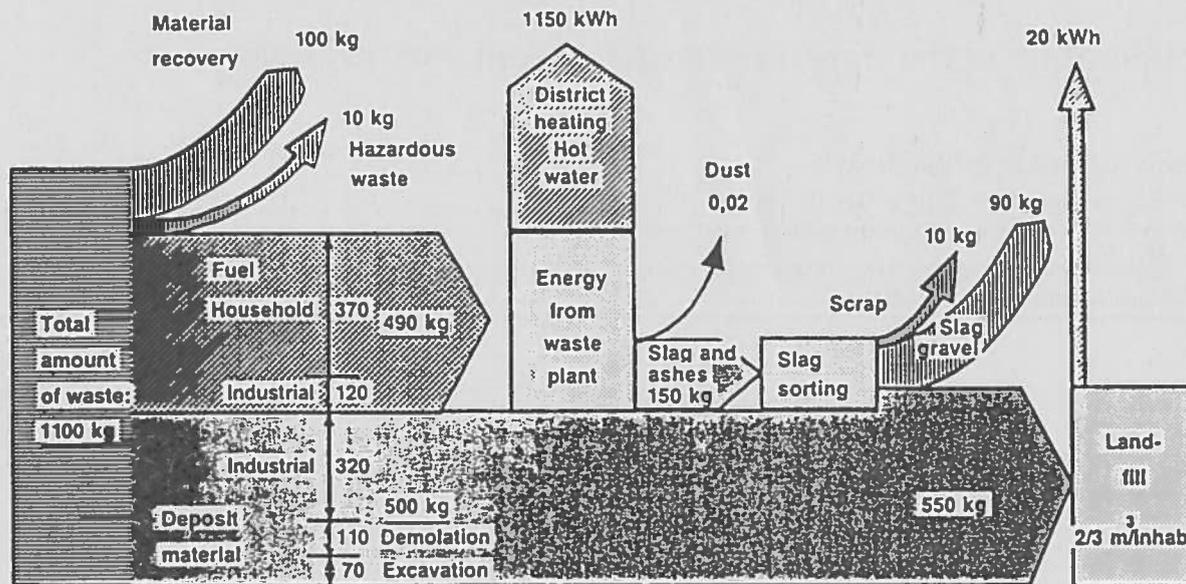


Case A, The world maritime university in Malmö, WMU

The WMU is a vision came true. The WMU had its origins in the deliberations of the Assembly of the IMO back in November 1981. Mr. C P Srivastava has been instrumental in the realization of this vision with the strong support and assistance of the UNDP Administrator, together with the Government of Sweden. The City of Malmö has contributed land, buildings, hostel facilities and recreational facilities of the highest standard. The generous and increasing Norwegian contribution has also been crucial during the early years of the University. Subsequently many countries, both developed and developing, generously contributed to the University. West Germany is one in the forefront of

SYSAV - WASTE MANAGEMENT 1986

Sorts: amount per inhabitant (455 000 inhab.)



The flow-sheet illustrates the waste management of SYSAV

the contributors, together with other persons, individuals or corporate entities.

Thanks to united efforts and coordination in northern Europa the WMU could be formed and funded! An example of regional cooperation among neighboring countries. It can be said clearly however that Mr. C P Srivastava, the Government of Sweden, the first rector, Mr. Sölve Arvedson of Sweden, and the City of Malmö played vital roles in the immediate establishment of the University. The University was officially inaugurated in Malmö, Sweden on 4th July 1983 with 72 students from 42 different countries, the number of students enrolled having since grown to nearly 600 from 103 countries. The aim is to have 200 students with 100 admittes every year for two-year courses. 400 have graduated, 100 are on their second year and 100 are being enrolled. The average age of students is 35 years which is due to the fact that those who come to the University already have advanced maritime education or an academic degree.

All students are trained in Malmö by a resident staff of eight professors from India, Japan, UK, USA, France, Germany, Norway. Rector is Erik Nordström of Sweden. The number of lecturers is now seven. WMU is supported by a very large important input of a large number of visiting professors who all provide their services free of charge, which again is a fine example of the support the University is getting. The theoretical knowledge is further enriched by on-the-job training and observations in different countries. All the students have had to stay in Malmö for two years except non-english speaking students who have to undergo an intensive English language course under competent English professors and with modern English laborato-

ry facilities, who arrive three months earlier than the others. English is the medium of instruction, it being the international language in shipping. All are entitled to a two-month winter break to enable them to work on their thesis.

The fundamental objective of the WMU is to provide the international community with effective means of transfer of maritime technology from developed to developing countries. Particular reference is to be given to the promotion of safer shipping and cleaner oceans for the development and benefit of international shipping and the protection of the marine environment and marine resources. The University's Charter states that it shall "provide interested countries, and in particular developing countries, with the most modern and up-to-date facilities for the training of their high level maritime personnel in all areas of shipping and related maritime activity".

WMU budget expected to balance around 7 million USD in 1989. Sweden is contributing 1/3 of budgeted costs, UNDP 1,2 million USD, Norway 1/2 million USD. 40 % of costs are covered by fellowships for each student. Present annual fellowship cost is 14,000, - USD per student per year.

WMU is exploring feasibility of establishing higher training on same pattern.

Case B, the regional Waste Company, SYSAV
SYSAV is organised on a regional base with around half a million inhabitants in the Malmö region. SYSAV's operations are based on the idea that waste is a resource and that the content of energy and material must be used as far as is practically possible. The

company's main aim "Maximum recycling and minimum dumping" also includes the ambition of striving for smaller quantities of waste. With reference to the way in which the waste is treated the following three main groups of waste can be distinguished.

	Tons per year	Kg/ inhab/ year
Material recovered at source	50 000	110
Waste for incineration (fuel)	220 000	490
Waste for dumping	230 000	500
Total	500 000	1 100

Thanks to the regional efforts, intramunicipal resources are available to take care of all kinds of waste in a qualified way. Also special daughter firms have been formed, one of them called SYSAV Development Co. Its aim is to promote and manage important R&D projects. The managing director of SYSAV Dr Kjell Nilsson is also professor at Lund University of Technology! SYSAV Development Co is also organising exports of its knowledge. SYSAV is operating in Canada and in Norway. Offers are also given to PRC especially to Malmö's friendship town in China, Tangshan. Normally SYSAV can offer experts, which are willing to work for very reasonable money at first, second and third weeks with colleagues in other countries planning to invest and improve their waste management.

SYSAV can also assist international and Swedish exportfirms in their marketing but not by seeing as much as a seller but as an experienced buyer. I just asked prof Nilsson about his experiences and recommendations after his two visits to China recently and he answered as follows. Sweden has nothing to teach most Chinese households in recycling. You are perhaps the world champions in it. So was also old Sweden once. I was born in the country side 55 years ago and I can give you excellent examples of how we economised with materials and how little we dumped at that time! But the urbanisation and the modern distribution techniques will cause waste. You cannot recycle always. Do conserve your techniques of reusing things from metals to latrine! Don't be like us - make the most of the chemicals and packages first and consider later how to manage their waste problems. Nowadays Swedish packaging industries like Tetra Pac and PLM are much more involved in the recycling system thinking. More important is to analyse the recycling of the waste from your industries. And don't forget the environmental problems both at the management facilities and in the society! Avoid leaking landfills, reduce the dumping as much as possible!

One advantage with SYSAV as a partner, compared with international firms or government sent experts to developing countries, is that with SYSAV experts you get people who know the practical as well as the theoretical problems. Local and regional people from our region and your regions could meet on your spot, if you like.



Case C The SSK/SIDA-Zambia or The "twin sister project"

The purpose of the Programme is to use the existing technological resource base in South Sweden to assist Zambia in its efforts to build up a manufacturing industry sector. The basic trait of the Programme is that technology transfer will take place between several pairs of one Swedish and one Zambian small or medium scale industry within the same branch of manufacturing.

The Programme uses a technology transfer model specifically designed for Small-Scale Industrialization (SSI) in developing countries, which has been applied in Tanzania with very positive results. Other more well-known technology transfer concepts, such as turn-key projects, licensing arrangements and joint ventures, is not well-suited for SSI particularly if it is desired that technology transfer should be an inter-industrial affair, with the long-term aim of establishing lasting commercial relations. Small industries in developed and developing countries do not have the resources themselves to establish contacts that could materialize into mutually beneficial business contacts. They need an organizational framework within which such contacts can be facilitated and developed. In total it has taken our organization about one year and a half to plan the programme and build an organizational framework suited for the Zambian industrial environment. The planning phase can be divided into three stages:

Phase 1

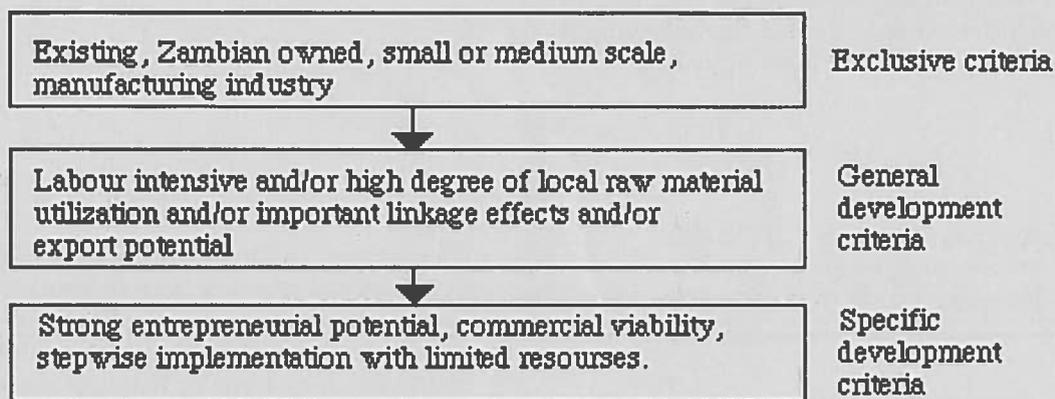
Phase 1 included studies of written material both about Zambia and about projects similar to the one planned by us in South Sweden. In October the first visit to Zambia was conducted, with the aim to get a general overview of the Zambian industrial sector and the framework under which it operates. Over 50 persons, including representatives of ministries, small scale industry support organisations, banks, branch organisations and a large number of industries, were met.

Another important task in phase 1 was to inform various organisations and companies in the Malmö/Lund region of our plans. The reactions to our proposal both in our country and in Zambia were encouraging and the work continued.

Phase 2

The main task during planning phase 2 was to determine criteria for Zambian companies suitable for participation in the programme and identify such companies. A second mission to Zambia was planned and conducted, and basic information about each industry was collected for the purpose of giving potential Swedish sister industries a picture of what would be expected of them. During the mission, loan administration proce-

Figure Schematic view of identification process



dures were discussed with Zambian financial institutions and a Zambian counterpart agency, able to function as a local programme consultant, was identified.

Phase 3

The third and last phase of the planning period has been characterized by a thorough job to match the identified Zambian industries with Swedish firms, able and willing to transfer the technological know-how required. A third mission to Zambia was conducted in which representatives from the identified companies in both countries met and discussed plans for the future collaboration.

The identified Zambian industries are by no means uniform in structure. When selecting industries, one exclusive criteria was applied; *only existing Zambian owned small or medium scale manufacturing companies were considered*. The project can mean either the introduction of a technology new to the company or the revitalization of existing technology. The further selection process can be described in two steps. First, each company/ project idea was screened regarding its compatibility with the Zambian development policy for the small and medium scale industry sector. Written material, such as the New Economic Recovery Programme etc and spoken views of government officials and small scale industry support organizations defined criterias in this respect, according to the following;

- * labour intensive
- * high degree of local raw material utilization
- * important linkage effects
- * export potential

The Swedish entrepreneurs are all carefully selected industrialist with long industrial experience from the same branch as their Zambian sister industry.

The companies are different and each project for collaboration will be specifically elaborated for the individual company concerned.

The assistance package is a combination of hardware and software, with the emphasis on software. It contains five components:

1. credit facility for machinery

2. on-the-job training
3. technical know-how
4. management development
5. export marketing assistance

The programme contains as an important part, a scheme for the financing of importation of needed machinery and spare parts. Due to the nature of the institutional set-up regarding small industry financing and promotion in Zambia, the funds will be channelled through two intermediary financial institutions - the Development Bank of Zambia (DBZ) and Small Enterprises Promotion Services (SEP).

South Development (our organisation) has assigned the task of administrating the payment flows to Swedish Savings Banks Association (SSBA), who will use its normal routines and international contacts for this purpose.

For the Zambian company, utilization of the available forex is conditional upon the payment of the countervalue in local currency to the intermediary institution. The company can choose to pay in cash, or obtain a loan for paying the cash cover. This implies that the major role of the financial institution in Zambia is to administrate the payment of overseas suppliers, not to be a financier of small industry expansion per se.

The foundation of the training programme is *on-the-job training*, which will take place both in the Zambian and in the Swedish industries. Theoretical training should be seen as complementary to the in-house activities. The reason simply being that training is part and parcel of an attempt to introduce, or improve, technologies in the Zambian companies. Practical familiarization with the technology in question, under the guidance of experienced instructors, has proved the most efficient way of introducing new technology in a company and improving existing ones.

An industrialist is constantly making technical decisions. Technical know-how is defined by us as a range of knowledge which gives a capacity to create or choose different techniques. Knowledge of different machinery and production methods is vital. The initial choice of appropriate production technology forms the basis to which machines are added successively as the company develops. It is also a matter of knowing how to utilize installed capacity at all stages by balan-



The author together with Mr Judab Monoo from MojoPress Ltd in Lusaka a twin sister firm to Duro Offset in Malmö. This INTA-paper is produced on a Apple Macintosh and Gestetner printing machine, a concept that Duro and Mojo are working with.

cing it with the width, depth and consistency of the product mix and choose the right production method for each item. For a proper selection of type and quality of raw material and construction methods, it is important that properties of raw materials are fully known. The understanding of the necessity of regular maintenance and security measures must not be overlooked either. The technical know-how has also an innovative side. To develop an industry involves modifying designs, learning cheaper and better production methods, experimenting with other raw materials and intermediate inputs, finding new fields of application for manufactured components and introduce new products in the product range.

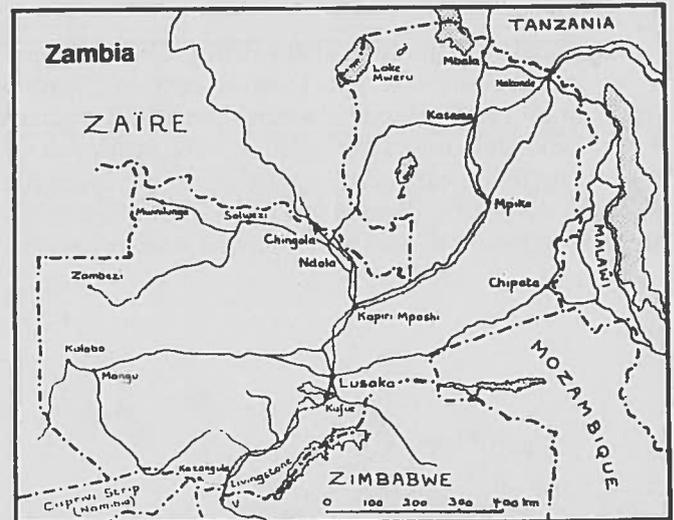
Technical progress occurs through different kinds of influence. Sweden has a long industrial tradition and the citizens are surrounded by advanced machines, at work but also in their houses, but for most Zambians the contact with sophisticated technology is rather limited. A main task of the Swedish sisters throughout the programme is therefore maximal transfer of technical know-how to all levels of the workforce. It is not a matter of telling what technology to use, but also explain why to use it and how. However, transfer of technical know-how will mainly be directed to key personnel in production and to the management. When technical know-how of key personnel is improved, it facilitates delegation of responsibility within the industry.

The management often have its special strength on the business side of the operation but need to improve its knowledge about industrial production and economy of scale. The management development training aims at implanting industrial thinking which will create the base for a successive transformation of the production process and product range of the company. Analysing and planning are major tasks for managers. A system for measuring outcome/results will be introduced at an early stage.

The Swedish industries possess close hand information about the European market and many of the identified Zambian companies have aspirations for export. "Export marketing assistance" implies first an assessment of the company's export possibilities, and

if such a potential is found, the Swedish industries can give advice on how to improve the products to meet international standards. Subcontracting arrangements are often the most realistic way of exporting and such relations can be created through the programme.

The chairman of our SSK-groupe for Zambia is Mr Bengt Modig. Mr Modig is the initiator of the project. He is also an experienced manager and owner of a medium sized firm in Malmö. The project leader is a geographer from the university of Lund, Ms Eva-Britt Grönberg.



The transfer chain North-South-North

My cases A,B,C represent three different methods of how to transfer technology and management from the most developed regions (the North) to the developing areas (the South). They also give three different examples of regional cooperation in the North.

In the WMU case the countries in the North with a base in northern Europe support the idea by a coordinating fulfillment of the World Maritime University in Malmö, Sweden. Different resources of money, experts, equipment are forming the new WMU and its education in maritime disciplines designed especially for talented people from the South especially. The studies in Sweden are completed with field trips to neighbouring countries in Europe. Quite a few experts from different countries come to lecture in Malmö. The cooperation among the developing countries takes place of course in IMO, the UN organisation but in practical terms at the University between the students and teachers. Returning to their home countries each student knows many colleagues all over the world. Knowing people is the best base for future cooperation. Quite a few number of the first graduates from WMU are already in very good positions in their home countries. WMU is such a success that we hope it can be followed by other examples. Malmö is already preparing a new health and medical care oriented University. Why not use profits made from the ongoing disarmament to fund further international efforts of this kind?

Next example, the regional waste management company in the Malmö area, SYSAV demonstrates what local authorities big as well as small can do by joining

their efforts and resources to manage the waste problems in a more professional way than just dumping. Our SYSAV Co has been very successful and is involved in many study visits both from and to all parts of the world. SYSAV has a special daughter company specialised on Research and Development and on exportation efforts. Many questions have to be answered as, how to avoid the need for land fills i.e. decrease the growing quantities of dumped resources? How to prevent the rich world from exporting hazardous waste to poorer regions? There is probably a good reason to prepare a new Waste Management University, also a WMU!

The third case the twin sister firm project between southern Sweden and the Lusaka area in Zambia "marrying" 10 small scale Swedish and 10 Zambian firms. This demonstrates again a new approach of organising technical and managerial transfer from the North to the South. Thanks to a good local cohesion in South Sweden (SSK) this project could start and with a

strong support from the Swedish SIDA. This is an example of concrete, local transfer over long distances. We hope that this project will prove that we can decrease the risks of leakages between the donors and the receivers. Central governments should not decide in detail in the transfers. A decentralisation down to the firms, and with follow-ups of what happens must be more efficient, more human and more developing than top government controls.

Finally all my three examples show one thing not always documented but well known in the inner circles. It is never a question of one way communication from the North to the South but also a vice versa. The people involved learn from each other in ways of thinking, customs, languages etc.

This is giving us in the materialistic and technical part of the world a chance to develop other qualities of life. A North-South-North transfer when it is developing, as in my three cases, promote peace at the grass root level. It cannot replace the political summits going on or the UN but it can provide a very good support and understanding between regions and nations and most of all between human beings all over the world.

Dear reader of this paper, you are most welcome to us in Sweden to see and study these and other examples. Always an open door!

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