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INDUSTRIAL REHABILITATION:
UNIDO POLICY AND FIELD OPERATIONS CONTRASTED

Working Paper V*

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* The opinions expressed in this document are those of the author and do not necessarily reflect those of the UNIDO Secretariat. This document has not been edited.

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This working paper has been prepared for the Project Appraisal Section.

Preliminary Remarks

The present working paper is based on a review of 95 project documents (See Annex 1), which have been appraised by the Project Appraisal Section and passed on to the PRC in 1988 and 1989, dealing with Industrial Rehabilitation mainly in Africa but also in the other regions.

The main purpose of this working paper is to contrast official UNIDO policy with what is done at the operational level in the field of Industrial Rehabilitation. On the basis of its findings, the working paper argues in favour of a more comprehensive approach to the design of projects supporting Industrial Rehabilitation in developing countries, notably through the inclusion of non-technical or non-technological aspects.

There are, however, two provisos:

(i) It goes without saying that some aspects of industrial rehabilitation may be dealt with simultaneously but outside the framework of any UNIDO project either by the country itself or through other bi- or multi-lateral co-operation. Thus, insofar as the recipient country is concerned, the end-result should then be equally comprehensive. But then adequate co-ordination with a UNIDO project is required and this should be fully described in the project document.

(ii) In the case of SIS-financed projects, the problems addressed must, according to current SIS programme criteria, be of a very specific nature, unforeseen and urgent; in other words, these projects cannot normally be comprehensive in nature. The project documents should however indicate the other aspects of industrial rehabilitation which either have been or may eventually have to be investigated.

This working paper is not and does not pretend to be in-depth in nature. It might be worthwhile having a more thorough and rigorous review of UNIDO technical co-operation in this priority area carried out by an appropriate organizational unit.

I. UNIDO policy on industrial rehabilitation

The four official documents issued by UNIDO are used here in order to obtain a definition of that policy.

a) "New Concepts and Approaches for Co-operation in Industrial Development", (IDB.3/16) a report by the Director-General of the Industrial Development Board, the role of UNIDO is thoroughly described, dealing largely with Industrial Rehabilitation. It has to be noted that this document was issued as early as 1987.

According to this, UNIDO has been entrusted with the role of promoting and co-ordinating international co-operation for developing countries' industrial development. Importance should be given to close co-ordination within the United Nations system. Critical areas are identified:

- technological, financial and managerial issues regarding the upgrading, rehabilitation and maintenance of industry
- stimulation of investment
- assistance to small industry
- upgrading of human resources possibilities
- technological help

Thereafter target areas are defined:

Industrial rehabilitation ranks first. It should take place at three levels:

- 1) at the plant level
- 2) at the subsector level
- 3) at the macro-economic or state level

Industrial rehabilitation should be viewed in a comprehensive framework including: technology, management, finance, human skills and policy environment. It is clearly asserted that "it is certainly not adequate to approach the problem as is often the case today, by focusing primarily on the technical and engineering dimension".

Local expertise has to be fully involved within every UNIDO's action.

It is also asserted that: "in certain cases, it would be important to propose that the most economical decision would be not to invest further resources in the specific project, but rather to allocate the scarce investible resources to other projects". To put it short, feasibility and future profitability are a pre-requisite to any action of UNIDO as far as industrial rehabilitation is concerned. It is no use rehabilitating what is not worth rehabilitating.

Industrial rehabilitation studies have to be conducted by teams involving UNIDO staff members, local and international personnel, competent both in technical and managerial fields. An investigation method divided into four steps to be followed by these teams is indicated.

Industrial maintenance and instrumentation is listed as second target area. Very obviously, this second item is closely related to the previous one as well as to industrial investment at large. Increased attention has to be paid to:

- maintenance facilities when planning industrial investments
- building up the technical skills
- establishing economic policies that would promote industrial maintenance
- non-availability of foreign exchange to purchase spare parts

As third and fourth target areas come Small- and Medium-scale Industry Development and Regional Industrial Development, Human Resources are considered as a fifth point. It seems to have become the competitive edge in industry. Investment in human capital has become a key complement to physical investment. "Human resources for industrial development should be seen not only in terms of the operational functions of manufacturing but also in relation to essential supporting functions for industry, such as research and development, marketing (including export marketing), technological extension and productivity service, engineering consultancy, financial consultancy and government planning and administration". The concept of labour market has to be taken into account and a thorough analysis of the demand and supply situation has to be conducted.

Transfer of technology is treated as last target area, in classical terms.

b)The Medium-Term Plan 1990-1995 issued by the General Conference, (GC.3/17.), also refers to industrial rehabilitation.

The reasons for rehabilitation of industrial firms are classified into two main categories:

- those that are related to the internal workings of the firm
- those linked with external factors

The three levels of intervention of UNIDO's assistance are once again listed. Interesting is the assertion that UNIDO's action at the industrial policy level should aim at removing major obstacles to the viable development of industry.

The Medium-term Plan does not deal only with industrial rehabilitation and far from it. However, some of the topics treated relate directly with industrial rehabilitation such as Environment and Energy. It is asserted that developing countries lack experience in dealing with environmental problems. "The existing institutional infrastructure for monitoring environment quality and health standards in these countries appears to be inadequate. At the same time, each country is constrained in terms of the economic resources that it can afford to devote to environmental policy".

As far as UNIDO is concerned, greater resources will be allocated to advisory services, sensitization and promotional activities, institution-building projects, etc. At UNIDO Headquarters, a database containing details of the environmental standards and the environmental implication of technologies, as well as monitoring devices for environmental planning will be developed.

"Ultimately, this will permit the application of practical guidelines for assessing the environmental impact of both investment and technical co-operation projects".

Similar intentions seem to exist in the field of energy. In respect of both environment and energy matters, UNIDO will continue to work in close co-operation with JNEP, ECE, IAEA, UNDP, WHO, ILO, UNESCO and other appropriate international organizations.

Many other problems are dealt with, such as integration of women in the industrial development that may relate to some extent to Industrial Rehabilitation.

c) In GC.2/17, General Debates, including Major Problems related to Industrialization of the General Conference on the Industrial Development Decade for Africa, some further information on Industrial Rehabilitation are provided. The topic is treated within the broader scope of Industrial Rehabilitation and Maintenance. This combination is strange, since Industrial Rehabilitation may have to be undertaken for totally other reasons than deficiency of maintenance; furthermore maintenance is not taken into account only when rehabilitation takes place and should in fact, on the very contrary, contribute to avoid premature rehabilitation.

One of the main features of African industries is under-utilization of already existing capacity that accounts for economic inefficiency and erosion of the potential offered by past investments in industry. There is a clear hint at so-called external shocks that bring about this matter of fact and that can be found in many developing countries (such as civil wars, disruption of the economy after independence).

Priority should be given to core industries, such as foundries, agricultural equipment manufacture, and food processing industries which support agriculture and meet the basic needs of the region's population.

d) The Annual Report of UNIDO 1988, (IDB.5/10), the problems of Industrial Rehabilitation are spoken about within a broader context entitled Industrial Management and Rehabilitation. The necessity for "developing a philosophy of rehabilitation at the government policy level..."

As a conclusion, a "definition" of Industrial Rehabilitation as it may be understood in the official documents issued by UNIDO is suggested:

! Industrial Rehabilitation should be understood as any kind of !
! comprehensive action aiming at rehabilitating industry at the plant level, !
! the sub-sector level or the macro-economic i.e. state- or regional-level, !
! taking into account all the problems faced by industry in the fields of !
! technology, management, finance, human skills, state policy, etc. The !
! social and environmental consequences of such actions should be paid due !
! attention !

In the following part of this working paper, this "definition" shall be contrasted with the 95 project documents dealing with the broad priority areas of Industrial Rehabilitation.

II. Industrial rehabilitation at the operational level

1) Reasons for UNIDO assistance (See Annex 2):

Based on the problems and obstacles encountered by Third World countries, industries can be divided into two categories. First of all external ones that cannot be mastered or only very partially by the industry itself and that have to be adapted to in some ways, with external assistance if needed. The second type of problems would be internal ones, those that have their causes within the industry or that could be solved by the industry itself with or without external assistance.

External problems are unfortunately plenty in developing countries. They may be principally of political, economic or natural origin. A fourth category is worth mentioning. It is former UNIDO's interventions!

The harshest political difficulties are conflicts of various kinds that disrupt or have disrupted the general economic framework or contributed among other negative factors to do so. Industrial Rehabilitation actions have been conducted in such countries among which Mozambique, Ethiopia, Sudan and Angola can be found. 10.5% of all the projects of Industrial Rehabilitation were conducted in countries where such troubles exist.

Other political problems may prevent industry from thriving normally, such as post-independence troubles with far-reaching changes in political option such as those witnessed in the former Portuguese African colonies, the existence of an inefficient and excessively large public sector or public administration, inadequate industrial policies ranging from abusive granting of monopolies or awkward fiscal measures are common features. For example, such as the granting of a collection monopoly for hides and skins in Africa that impeded the leather industry from developing because of the total lack of competition and hence the non-existence of better results in collecting better hides and skins, or such fiscal or monetary policies preventing entrepreneurs from re-tooling their plants because imports of equipment or spare parts not available in the country were made impossible!

Negative factors of an economic nature are obviously numerous.

Underdevelopment, par excellence, which could be defined by the non-availability locally of goods or services required normally by a country as a whole or by an industry in order to thrive, could be considered as the common feature of almost all developing countries, even if nuances of intensity are to be taken into account. Sufficient food, housing, basic infrastructure such as transportation, spare parts, intermediate inputs, Research and Development services, reliable and comprehensive economic information on domestic and foreign issues, skilled and experienced manpower, staff with international experience, foreign exchange at affordable rates are very often, if not always, problematic.

It has to be underlined that the lack of skilled labour problems are by far one of the most recurrent phenomena. It is a direct consequence of the inadequacy of domestic education and training systems. This shortcoming can be observed at every level of industrial activity, be it at the production level or at the managerial one. Therefore many projects are in fact training programmes or include training periods for local staff at a plant level almost always and sometimes at the sectoral or regional level. Project US/RAF/88/274, "In-plant Group Training Programme in the Field of Management of Rehabilitation of Railway Locomotives and Rolling Stock for African English-speaking Countries", as well as project SI/NIR/89/803, "Assistance to the Federal Institute of Industrial Research Oshodi" are two relevant examples.

As other economic hardships encountered, market hardships are quite common either at home or abroad. They may push input or energy prices so high that production cannot remain competitive and profitable. Or simple market shrinkages impede local industries from selling their products at home or abroad especially if protectionism increases. Project SI/SEN/88/802, "Assistance d'urgence en matiere d'ingenierie a l'atelier mecanique de Dakar-Marine" which foresees the production or the repair of agricultural implements among other activities, as a substitute for shipbuilding. Given the world crisis affecting this sector is an excellent example for this category of difficulties.

A third main cause accounting for industrial rehabilitation would be natural catastrophe or severe climatic phenomena. Drought or tropical rains are common problems in numerous African countries for instance. Project US/SUD/88/266 "Product and Process Research to create the basis for the rehabilitation of the Barbanoussa dairy plant by converting it into a Karkadeh powder production plant" illustrates correctly such situations. A terrible drought has hit the Sudanese agriculture lately, entailing migration of cattle raisers and thus depriving the dairy plant of Barbanoussa of its necessary raw material: milk!

A last category of causes accounting for the need of Industrial Rehabilitation has to be dealt with. Four projects reviewed are the direct consequence of the non-completion or the inadequacy of former UNIDO interventions. It is the case of the project US/COI/88/002, "Remise en service des appareils de distillation d'huiles essentiels", which was the direct consequence of the former project US/COI/79/256 that permitted the installation of five modern essential oils stills, using local raw-material and sparing energy. It simply appeared that nobody ever used these stills! Projects DP/NIR/89/803 and XP/NER/88/031, "Production de produits alimentaires essentiels", deal with exactly the same kind of problem. There obviously is a very deep problem of adequacy of the help provided and local needs, local capabilities of receiving our help.

Besides these external factors that are certainly difficult to master for the industry itself, internal negative phenomena have to be faced by UNIDO's Industrial Rehabilitation projects. One has to admit, however, that this distinction between different kinds of causes may be somehow artificial. The bad equipment of a plant is not only an individual problem but also an integral part of underdevelopment.

A distinction can be made between purely technical or production related problems and those of economic, commercial, financial, organisational, management, know-how and skills nature.

Technical problems are those that are best identified and easily spoken about in the project documents.

Equipment is often described as being outdated, unadapted, worn out, idle or simply broken. UNIDO's assistance is often required to repair or replace such equipment, start or re-start it since under-utilization of capacity already installed is almost "normalcy" in developing countries. This problem is the most recurrent one in the project reviewed. Simultaneously the technical staff in charge is regularly said to be under-qualified or inexperienced. Technical shortcomings in all fields: production, maintenance and repair are very common features. Unsatisfactory maintenance is evoked in two thirds of all the projects reviewed. The logical consequence of such negative elements are generally low quality of production, high waste of energy, high waste of raw material and high discard rate.

These visible elements have more abstract counter-parts that are, very regretfully, often dealt with embarrassment. Developing countries suffer from tremendous lack of managerial skills. Markets are ignored areas because of the non-availability of basic market and marketing knowledge. This shortcoming is often reinforced by government policy aiming at banning the very concept of market as if it was some part of reality that could be escaped from totally. Production costs remain unknown because of the non-availability of even basic accounting, cost analysis knowledge. Experience in finance is a rarity as well as production, purchases and sales planning. These negative factors worsen and may account for the previous problems stated above.

Many project documents mention these shortcomings. Many more, however, probably tend to avoid them. Project SI/MOZ/88/804, "Assistance to Clay Brick Production" is presented in a very technical way and seems to be quite a good one as far as technology is concerned. However, quantity problems rarely appear alone and quality problems are never only of technical nature. There is no bad quality in itself, but there is insufficient quality for a given market.

In some other projects, a more global approach at the plant level, integrating both managerial and technical problems have been adopted. Project SI/TOG/88/801, "Assistance a la biscuiterie 'La Pampa'" is one of the all too rare projects that seemed to be good, mentioning carefully all the problems to be tackled by a comprehensive Industrial Rehabilitation project.

2) The problems to be overcome and UNIDO actions:

a) General Political Environment and Industrial Rehabilitation:

As far as project documents are concerned, the type of general economic framework should be systematically indicated. It is really not the same thing to rehabilitate an industry within a centrally planned economy as within a market one, apart from the technical point of view which is only one of the components to consider when Industrial Rehabilitation takes place. All the more so as recently many countries seem to be willing to switch from a centrally planned economy to a market system.

The lack of reliable information about the general economic framework may lead to errors of appreciation. In project SI/GUA/88/802, "Assistance in introducing technology for the repair and maintenance of low-cost agricultural tools", Guatemala wanted to set up basic maintenance workshops for agricultural implements throughout the country. Nothing was said about how these workshops were to be integrated in the general economic system. It is certainly not UNIDO's role to choose what system best suits Guatemala. However, it is certainly within its duty to outline contradictions between means and goals in the projects that are the subject of its assistance.

b) Economic Environment and Industrial Rehabilitation:

The most recurrent problem, is the narrow technical point of view adopted in the project documents, as if it were the only element to consider in a sound and thorough Industrial Rehabilitation action. In the list of outputs expected in the project documents reviewed, only 15 prodocs seemed to include a report or some kind of written recommendation on marketing, supply analysis, finance, book-keeping, personnel management or cost analysis. It is obviously unsatisfactory, all the more so as, about 35 prodocs would have needed to take into account such issues. (See Annex 4)

Let us review two examples. In project SI/MAG/89/802, "Assistance d'urgence a Zema, Societe de Production d'Engrais Organico-Biologiques", UNIDO assistance was required to re-start a fertilizer plant in Madagascar. It was clearly said that till then there had been no follow-up of the product once sold to the farmers. However, the prodoc did not consider starting anything in that field. So the future market will remain only vaguely known, although a thorough market study would have been really justified. What kind of fertilizers would be technically acceptable for Malgasy farmers? What kind of fertilizers, for which kind of crops are really needed? What quantity could be sold? And questions of future profitability could have been analysed then, and so on.

In the project SI/SUD/88/801, entitled "Improvement of Management in the Textile Industry", although it contains very positive elements in the managerial field, apparently misses the point of marketing and cost-analysis which are prerequisites for a sound management of any industry if any future profitability is to be achieved.

! As a conclusion, it has to be stressed that not enough attention is !
! paid to non-technical or non-production related problems. Economics and !
! management are key factors of sound Industrial Rehabilitation and are to !
! be considered as such according to UNIDO official documents. !
!

c) UNIDO's Assistance to Industrial Rehabilitation vis a vis Private Enterprises from both the Developing and the Developed Worlds, and vis a vis Donor Developed Countries

From time to time, project documents may give the impression that UNIDO facilitates business between private partners from the developed world with enterprises from the developing world for the benefit of the former.

In project US/EGY/88/044, "Up-grading of technical capabilities of selected shoe factories," an Egyptian shoe factory was to be helped by a reputed European shoe manufacturer and then turned into a model plant. This example may lead to two questions: on which criteria was the future model plant chosen, and how was the European partner chosen, what will be afterwards the relations of dependency, if any, between the Egyptian shoe factory and the European manufacturer? Should not the project document account for these potential problems? The involvement of foreign private partners should be taken into account, when the project document is appraised. UNIDO should get much more information on the real situation of the industry to be rehabilitated.

In project SI/UGA/89/801, "Assistance in Reorganization of Casements Africa Ltd", assistance was to be provided to a private firm having management troubles with almost all of its activities. As far as the firm was concerned, external assistance was needed. As far as Uganda was concerned, the housing situation seems to be rather bad, even if the project document may have over-emphasized this point. But was assistance to this firm the best way to remedy the situation? Why does not the project account for the choice of this specific firm? Why was not a comprehensive programme of assistance considered to rehabilitate/develop the building materials and construction industries?

In project UF/RAS/88/185, "Assistance in the Development of Marine Ressources-based in the selected Pacific Islands Country", though a comprehensive project with undisputable qualities, Japanese and New Zeland firms involvement was expected. To what extent these politically and economically weak countries could control the economic help of their mighty neighbours? The same remarks could apply to two comprehensive programmes in the field of food-industry between France and respectively Venezuela and Mexico. (See projects US/VEN/88/242 and US/MEX/88/122).

! It is an excellent thing to involve private interests in Industrial !
! Rehabilitation since it is more or less some warranty for caring and !
! interest. However, private partners have to be chosen on agreed criteria !
! and should be able to have a real impact for the recipient country. Private !
! partners have to be really involved to some degree, if possible financially, !
! and not only to receive passively UNIDO's assistance. !

! Cooperation between developing countries and experienced developed !
! ones is certainly an excellent thing, however the return on investment more !
! or less expected by the developed country should be covered in the project !
! document, as well as that expected by developing countries. !

d) Industrial Rehabilitation and Environmental Problems:

The problems of environment were regularly ignored in the project document reviewed and, even when the issue was evoked, it may have been without appropriate justification. The problem of environment has however to be taken into account, according to UNIDO's official documents. All the more, environmental catastrophes caused by industry have become fairly common in the last decade all over the world.

A small sample of three projects where some attention should have been paid to the environmental problems have been examined. The list of all project documents reviewed, where such shortcomings had to be noted according to us, is to be found at the end of this study. (See Annex 5)

Project SI/CUB/88/801, "Technical Assistance for Establishing the Operation of all Catalytic Cracking Plant at the Nico Lopez Oil Refinery in Havana" deal with the rehabilitation of a plant in the petrochemical industry. There are very obviously hazards for the environment. It is a pity that nothing is said on that matter.

Project US/PHI/88/235, "Plastics Research and Development Unit (PRDU)" aims at setting up an institution that would be a comprehensive training, testing, processing center for the plastics industry in the Philippines as well as an information center with a view to proping up this industrial branch in the Archipelago. Not a single line evokes the important environmental consequences of the production and the use of plastics!

As a last example, project SI/BOL/88/803, "Consultaria para la reorganizacion administrativa, financiera y commercial de la Fabrica Nacional de Cemento, SA" deals with the thorough managerial reorganization of the company. Not even a single line on environmental problems is to be found in the prodoc, although cement production and cement use always entail damage to the environment.

In short, out of the 95 project documents reviewed only two, dealing with industries which are likely to be dangerous for the environment, dealt more or less directly with the problem.

Project SI/TUR/88/801, "Eskishir Textile Mill Waste Water Treatment Plant" is totally devoted to environmental problems since it plans the fielding of an expert in order to set up a waste water treatment plant. The expert is expected to analyze the whole issue and to write a report containing recommendations on the problem. This project, fitting perfectly the official environmental approach of UNIDO, may however be hard to justify. It was not very obvious that the industry itself could not really manage to conduct the study with its own funds. There is a danger that private enterprises want to escape the financial burden of sound environmental equipment and seek systematically public or international assistance to tackle their environmental problems.

Project US/RAF/88/100, "Regional Hides and Skins, Leather and Leather Products Improvement Scheme" and in all the projects related to this programme - although a very good and comprehensive one - quotes the potential environmental problems of the leather industry in Africa. However apart from this umbrella project, there seems to be none dealing concretely with these issues.

! As a conclusion, it can be asserted that despite the official concern !
! for environmental issues and the asserted necessity of a comprehensive !
! approach of Industrial Rehabilitation, environmental problems are so far !
! regularly ignored. !

III. Discrepancies between the official policy and field operations

There are many discrepancies between UNIDO's official documents and what can be found generally in the project documents dealing with Industrial Rehabilitation. Nevertheless, positive elements have to be brought into light and should be used as guidelines for future action.

As an introduction, it can be said that the projects or the elements of projects that seemed to be really interesting are those which adopted some comprehensive attitude towards the problem to be tackled and which therefore were the likeliest to have a general positive impact.

As already, stated economic problems are currently underestimated. Industrial Rehabilitation is understood most of the time from a specifically technological and production point of view. However, there do exist some projects which pay attention to the economic viability of the action being conducted at the plant- or company-level, to the relations between the different economic sectors when UNIDO's action takes place at the sub-sector level or to the macro economic context as a whole at the national- or regional-level.

a) As far as assistance at the plant- or company-level is concerned, there are many, even if isolated, positive elements that could contribute to successful Industrial Rehabilitation projects. To ensure the viability of rehabilitation, some project documents included not only some form of technical assistance but also more or less intentionally the involvement of local private interests such as US/EGY/88/044, "Upgrading of Technical Capabilities of Selected Shoe Factories" which can entail greater interest from the part of the local people to be assisted. Some other projects included either a market analysis or a supply analysis in order to adjust their production to the local or foreign needs or improve the terms and conditions of purchasing inputs. Project XP/TOG/88/120, "Etude de Rehabilitation et plan de redressement pour l'usine SOTRAMETO" was good in that respect. This example is interesting since it shows how to integrate dynamically the outside economic conditions in the normal operation of a very small industrial unit. Diverse potential suppliers of metal were to be reviewed in order to find the most appropriate way to ensure the raw material delivery needed by the plant. A market survey was to be conducted to make sure of the position of the company's products on the local market and to plan as rationally as possible the development of new items. Some other projects included the possibility of exporting their local products such as the above mentioned Egyptian project.

! As a conclusion, it can be said that even at the plant or company !
! level a more comprehensive approach is not only badly needed but also !
! possible as the projects we quoted indicate. It is really a pity that such !
! an approach towards the external economic framework remains the exception !
! which confirms the rule. !

b) As far as the all too rare Industrial Rehabilitation actions at the sub-sector level are concerned, a similar comprehensive attitude may be noticed from time to time in the project documents.

Project US/VEN/88/242, "Projet de cooperation entre le Venezuela et la France dans le domaine agro-industriel " tried to involve different sectors of the industry and not only the food industry since it could not be rehabilitated harmoniously without taking into account its interactions with other industries. Hence the mining industry was to benefit from this project since the production of mineral fertilizers was to be favoured as well as the chemical industry for the same reasons, all the more so as Venezuela is an importer of such products which it can produce itself under favourable conditions. The whole project included a strong component of market analysis especially abroad, in developed countries since Venezuela wants to become a net supplier of food and not remain a net importer as it has been until now. A similar project between France and Mexico was reviewed too.

Whatever the results of these two projects once completed, since unforeseeable problems are always possible and since the human factor cannot be mastered as any other parameter, it may be asserted that they were formally good project documents. They fitted perfectly UNIDO's official policy to rehabilitate thoroughly whole industrial sectors.

A more recent project entitled "Restructuring the agro-industrial sub-sector in Zambia, including financial, economic and technical assistance to E.C. Milling" aims at restructuring the agro-food industry in Zambia, adopting a comprehensive approach, using previous UNIDO experience in the same industrial sector in Tunisia and in Senegal. Every factor from the macro-economic environment including state policy problems, to the internal problems of a regular firm have been considered. It appears formally to be a project whose chances of success are likely to be very high, provided that the information can be used to present a comprehensive/integrated approach.

! As a conclusion, it can be said that ambitious projects of these !
! kinds are dramatically rare and should be more numerous if Industrial !
! Rehabilitation is to go beyond the level of technical trouble shooting and !
! become a full-fledged element of industrial policy in developing countries. !
!

c) As far as the even more unusual Industrial Rehabilitation projects at the macro-economic level, one (there was no other comparable) project drew our attention for its comprehensiveness.

Project US/RAF/88/100, "Regional Hides and Skins, Leather and Leather Products Improvement Scheme" was certainly one of the best projects reviewed, one which seemed to be the most likely to be successful at some level. Some 16 African countries divided in a French-speaking group and an English-speaking one were assisted simultaneously for a thorough rehabilitation of their national leather industry. A very comprehensive, although necessarily loose umbrella project, organized the whole programme while smaller projects at the national level, and hence better adapted to local conditions implemented the general guidelines. All the problems of the industry either downstream or

upstream were to be tackled at some point of the programme. Although more emphasis could have been put on the marketing of the final product, the analysis given as background justification was really comprehensive and detailed. Moreover, it intended to promote co-operation between developing countries as an alternative to North-South cooperation in line with UNIDO's official commitments.

! As a conclusion, it can be said that provided important funds could be!
! found and proper co-ordination ensured this kind of project would be very !
! interesting to promote, and is more likely to have more impact than the !
! assistance currently conducted project-by-project which leads unavoidably to!
! regrettable shortcomings. !
!

d) As far as the environmental aspects are concerned, this is a systematically ignored area. However, some projects hint at this problem.

For instance, project US/TUN/88/224, "La Restructuration Industrielle dans le Secteur Agro-Alimentaire" mentions the problem of food packaging and its potentially negative impact for the environment. Nevertheless, what was really done in that field remains unknown. The need for packaging and the use of plastics are very recurrent problems that concern not only Industrial Rehabilitation. It is a pity that these issues are usually not even mentioned in project documents.

Another quite common problem is the exploitation of so-called replenishable resources. Project US/RAS/88/185, "Assistance in the Development of Marine Resources-based Industries in Selected Pacific Islands Countries" mentions this point as an economic asset but says nothing about the possible problem of over-fishing. We have seen exactly the same problem in the project SI/TUR/88/803, "Assistance to Laurel oil Factory in Silifke, Icel" where the essential oil plant was supposed to process leaves of wild grown laurel bushes. Without knowing much about laurel bushes, it would be really remarkable if the exploitation of wild plants could go on this way with no or very little damage for the environment.

! As a conclusion on environmental problems, it has to be said that the !
! actions of UNIDO are sometimes missing the point. Hints to the topic may be !
! found, but nothing thorough and really convincing exists for the time-being. !
!

e) As a last point, attention should be drawn to the social aspects of industrialization which are regularly ignored too.

In only one project related to Industrial Rehabilitation were there some hints to the problems of women's integration in the Industrialization process, namely in project XP/NER/88/031, "Production de Produits Alimentaires Essentiels". Onions and manioc processing units were to be rehabilitated. These small units are usually used by women and their job was to be facilitated through the Industrial Rehabilitation action. Another project document mentioned clearly the positive consequences of the assistance to be given for the labour market, namely the project US/RAF/89/070, "Assistance a l'industrie du cuir".

! UNIDO should endeavour to take into account the social problems of !
! the countries assisted. This concerns in particular the integration of !
! women in industrial development. !
!

Annex 1

List of Projects Reviewed

- 1) SI/MOZ/88/804 Assistance to Clay Brick production in Maputo
- 2) SI/MOZ/88/803 Technical Advisory services to CARBOMO E.E. (Coal Programme Cabinet) in planning the rehabilitation of the Tete/Moatize Coal-Mines
- 3) UF/MOZ/88/198 Technical Assistance to the Directorate of Salt Industry (UDIS)-UNIDO Consultations with Counterpart Agency
- 4) US/EGY/88/044 Upgrading of Technical Capabilities of Selected Shoe Factories
- 5) SI/EGY/88/801 Assistance in the Application of CAD/CAM in Railwagon Design and Manufacturing
- 6) SI/EGY/88/802 Quality Improvement of Standard and Low-Alloy Steels in Basic Oxygen Furnace (BOF)
- 7) SI/EGY/88/803 Egypt Efficiency Improvement of the Misr Rayon Polyester Staple Fibre Production Plant
- 8) SI/ZAM/88/803 Assistance to the Foundry Industry
- 9) SI/ZAM/88/802 Technical Assistance to the Engineering Industries
- 10) SI/SUD/88/801 Improvement of Management in the Textile Industry
- 11) XP/SUD/88/122 Support to the Project SF/SUD/86/003, Training Component of the Sudan Sugar Rehabilitation Project
- 12) XP/TOG/88/120 Etude de Rehabilitation et Plan de redressement pour l'Usine SOTRAMETO
- 13) TOG/88/801 Assistance a la biscuiterie "La Pampa"
- 14) SI/TOG/88/802 Industrie de la chaux
- 15) US/TOG/89/075 Assistance pour la modernisation et extension des activites de la Societe Industrielle et Commerciale de Papier (SICOPA)
- 16) SI/ETH/88/803 Computerization of Industrial Statistics
- 17) SI/ETH/89/802 Assistance to Sava and Addis Container Glass Factories
- 18) US/IVC/88/050 Mise en place du plan d'economie d'energie dans les etablissements industriels
- 19) SI/SEN/88/807 Assistance d'urgence en matiere d'ingenieurie a l'atelier mecanique de Dakar-Marine

- 20) US/SEN/88/269 Programme d'Appui a la Restructuration industrielle, avec l'analyse sur la faisabilite de la rehabilitation industrielle
- 21) XP/NER/88/031 Production de Produits Alimentaires Essentiels
- 22) XA/MAU/88/602 Diversification of the Production of the Societe Arabe Du Fer et de l'Acier en Mauritanie
- 23) US/MAU/89/178 Assistance to the Societe Arabe du Fer et de l'Acier en Mauritanie in Management and Products diversification
- 24) SI/MLW/89/801 Technical Assistance for Reactiving Existing Radio Frequency Furnace for the Heat Treatment of Agricultural Edge Tools of Messrs. Chillington Agrimal (Malawi) Ltd
- 25) XA/BKF/88/675 Etude pour la Definition d'une Politique et d'une Strategie Nationales de Maintenance Industrielle
- 26) SI/UGA/89/801 Assistance in Reorganization of Casements Africa Limited
- 27) SI/UGA/89/803 Reactivation of Stock Uganda Manufacturers
- 28) SI/MAG/89/801 Assistance a la Determination et a la Certification des Pierres Precieuses
- 29) SI/MAG/89/802 Assistance d'Urgence a Zema Societe de Production d'Engrais Organico-Biologiques
- 30) UF/ZIM/89/803 Assistance to Messrs. Non-Ferrous Die-Casting (Pvt) Ltd
- 31) UF/ZIM/89/092 Assistance to Cochrane Stock Zimbabwe (Pvt) Ltd
- 32) SI/ZIM/89/803 Assistance to Messrs. All Metal Founders Ltd
- 33) SI/ANG/89/801 Technical Assistance to the Enhancement of a Computerized Survey of Angolan Industrial Enterprises
- 34) SI/GUI/89/801 Technical Assistance for the Rehabilitation of the Pharmaceutical Industry
- 35) SI/ZAI/89/801 Assistance a la Minoterie Madis a Sake/Goma Kivu Zaire
- 35*) XP/INT/89/125 Solidarity Ministerial Meeting in the Industrial Development of Guinea, Conakry
- 36) SI/MOR/89/801 Assistance to Labometal to repair Testing Equipment

- 37) US/TUN/88/224 La Restructuration Industrielle et l'Analyse sur la Rehabilitation Industrielle dans le Secteur Agro-alimentaire
- 38) SI/NIR/89/803 Assistance to the Federal Institute of Industrial Research Oshodi
- 39) SI/NIR/89/804 High Level Advisory services on the Reactivation of the Nigerian National Paper Manufacturing Company Ltd (Wopin Paper Mill)
- 40) SI/URT/88/801 Assistance to Mrida Maintenance Services
- 41) US/COI/88/002 Remise en Service des Appareils de Distillation d'Huiles Essentielles
- 42) US/RAF/89/070 Assistance a l'industrie du cuir
- 43) US/RAF/88/102 Regional Tannery Rehabilitation Scheme
- 44) US/RAF/88/263 Rehabilitation of Selected Plants
- 45) UC/RAF/88/022 Preparation of a plan of Action to Rehabilitate Iron and Steel in the PTA Region
- 46) US/RAF/88/025 Mission d'Identification des Centres d'Excellence pour Stage sur l'Entretien et Reparation des Bateaux (Senegal, CIV, Maroc)
- 47) US/RAF/88/100 Regional Hides and Skins, Leather and Leather Products Improvement Scheme
- 48) UF/PHI/88/014 Diagnostic Survey of the Plastics Transformation Industry
- 49) UF/RAS/88/185 Assistance in the Development of Marine Ressources-based Industries in the Selected Pacific Islands Countries
- 50) US/PHI/88/235 Plastics Research and Development Unit (PRDU)
- 51) SI/YUG/88/801 Technical Assistance to the Industry of Machinery and Equipment
- 52) UT/INT/88/090 UNIDO/Czechoslovakia Joint Programme for Cooperation: A-Non-Metallic Industries
- 53) SI/YUG/88/802 Technical Assistance to the Industry of Drive Shifts for Agricultural Machinery
- 54) SI/ROM/88,801 Control Noise Pollution Generated by Electrical Equipment

- 55) SI/POL/88/802 High Level Advisory Assistance for Robotization of Middle Presses Line at Car Factory FSM-TYCHY
- 56) SI/ROM/88/802 High level Advisory Assistance in implementation and quality control of modern techniques for reconditioning matrices in tractors, autovehicles and agricultural machinery industry
- 57) SI/TUR/88/801 Eskichir Textile Mill Waste Water Treatment Plant
- 58) SI/TUR/88/803 Assistance to Laurel Oil Factory in Silifke, Icel
- 59) SI/ALB/89/802 High level Advance Assistance in Improving the Quality of Fired Clay Products and Decorative Ceramics
- 60) SI/TUR/88/804 High level advisory Assistance for Modernization of existing Parsan workshop
- 61) SI/ALB/88/802 Assistance for Rehabilitation of Lindane Manufacturing Plant at Durres
- 62) SI/CUB/88/803 Improved System of Diagnostic Maintenance in the Fertilizers Plant of Cienfuegos
- 63) SI/CUB/88/801 Technical Assistance for Establishing the Operation of the Catalytic Cracking Plant at the Nico-Lopez Oil Refinery in Havana
- 64) SI/CUB/88/802 Technical Assistance for the Production of Rubber Stoppers used for Pharmaceutical Products
- 65) US/MEX/88/122 Projet de cooperation dans le Domaine Agro-industriel entre le Mexique et la France
- 66) SI/MEX/88/802 Assistance to Canacindra's Furniture Industry Sector
- 67) SI/BOL/88/802 Assistance to COMIBOL (Bolivian Mining Corporation) for Production of low-carbon Steel Ingots for Re-rolling
- 68) SI/BOL/88/803 Consultoria para la reorganizacion administrativa, financiera y commercial de la Fabrica Nacional de Cemento, SA
- 69) SI/BAR/88/801 Immediate Technical Services in Repair and Maintenance and Plant Engineering at Shop Floor Level
- 70) SI/JAM/88/802 Assistance to the Handbag and Luggage Sub-group of Companies

- 71) SI/JAM/88/801 Assistance to the West Indies Pulp and Paper Group of Companies
- 72) SI/BOL/89/802 High level Advisory Assistance in Evaluating an Experimental Asbestos Processing Plant
- 73) SI/BOL/89/801 Emergency Assistance to the El Puente Cement Factory, Tarija
- 74) SI/BRA/88/801 Assistance to the Brazilian Plastics Industry
- 75) SI/NIC/89/801 Improvement of processing Methods and Product Quality in COTEXMA
- 76) UF/PAR/89/120 Assistance in Spare Parts
- 77) SI/GUA/88/802 Assistance in Introducing "Technology for Repair and Maintenance of Low-Cost Agricultural Tools"
- 78) SI/HON/88/801 Assistance to Industrias Quimicas CONRAD Ltd
- 79) SI/GUA/88/801 Urgent Assistance to the Salinas Nu-Atzan
- 80) US/VEN/88/242 Projet de cooperation entre le Venezuela et la France dans le domaine agro-industriel
- 81) XP/BKF/88/059 Bourses de formation au profit du personnel de l'unité textile Faso-Fani
- 82) XP/STP/88/048 Assistance preparatoire pour la reorganisation de l'atelier national de maintenance a Sao-Tome
- 83) US/RWA/89/192 Preparatory Technical Assistance for the Establishment of an Integrated Plot Plant for Training and Demonstration for the Design, Production and Repair of small-scale Agricultural Machinery/Implements, Tools and Spare Parts
- 84) XP/SUD/88/067 Sudanese Industries Association Data Unit
- 85) US/SUD/88/266 Product and Process Research to create the basis for the Rehabilitation of the Barbanoussa dairy plant by converting it into a Karkadeh powder production plant
- 86) UC/ZIM/86/261 Energy Auditing Training Course
- 87) US/RAF/88/065 Programme de Formation en Groupe dans le Domaine de l'Entretien et la Reparation de Materiel de Chemin de Fer

- 88) US/RAF/88/094 Programme Negotiations for Hides and Skins and Leather
- 89) US/RAF/88/274 In-plant Group Training Programme in the Field of Management of Rehabilitation of Railway Locomotives and Rolling Stock for African English-speaking countries, 10 April-30 June 1989, UK/Egypt
- 90) XA/RAF/88/673 Phase III In-Plant Group Training Programme in the Field of Maintenance Engineering for Iron and Steel Industry for PTA Countries, ZISCO, Zimbabwe
- 91) US/RAF/88/052 Workshop on Industrial Maintenance
- 92) UC/RAF/88/200 Preparatory Activities for the Regional Hides and Skins, Leather and Leather-Products Improvement Scheme
- 93) UC/RAB/88/203 Programme de Formation a la Fonction de Maintenance des Equipements Industriels
- 94) UC/RAB/88/202 Programme Regional de Formation a la Fonction Maintenance des Equipements Industriels
- 95) UF/RAF/89/165 Group Training Programme for Maintenance and Production Managers on Maintenance Systems

Annex 2

List of the outputs of the project documents presented to PRC in the area of Industrial Rehabilitation

Project Number	Government Advice	Technical Report	Non-Tech. Report	Technical Staff Trained	Managerial Staff Trained	Environmental Issues Dealt with	Direct Action
1) SI/NOZ/88/804		*					*
2) SI/NOZ/88/803		*					
3) UP/NOZ/88/198				*			
4) US/EGY/88/044				*			*
5) SI/EGY/88/801		*					
6) SI/EGY/88/802		*					*
7) SI/EGY/88/803		*					
8) SI/ZAN/88/803		*					
9) SI/ZAN/88/802		*					
10) SI/SUD/88/801			*		*		
11) IP/SUD/88/122		*					
12) IP/TOG/88/120		*	*				*
13) SI/TOG/88/801							*
14) SI/TOG/88/802		*	*				*
15) US/TOG/89/075		*	*				
16) SI/ETH/88/803				*			*
17) SI/ETH/89/802		*					
18) US/IVC/88/050				*			*
19) SI/SEN/88/802		*		*			
20) US/SEN/88/269	*	*					
21) IP/NER/88/031		*		*			
22) IA/MAU/88/602		*					
23) US/MAU/89/173			*				*
24) SI/MLW/89/801				*			*
25) IA/BKF/88/675	*	*					
26) SI/UGA/89/801		*					*
27) SI/UGA/89/803		*					
28) SI/MAG/89/801							*
29) SI/MAG/89/802		*	*				
30) UP/ZIN/89/803		*					*
31) UP/ZIN/89/092		*					*
32) SI/ZIN/89/803		*					*
33) SI/ANG/89/801		*					*
34) SI/GUI/89/801		*			*		*
35) SI/ZAI/89/801		*	*				
35*) XP/INT/89/125		*					*
36) SI/NOR/89/801							*
37) US/TUN/88/224					*	*	*
38) SI/NIR/89/803				*			*
39) SI/NIR/89/804		*	*				*
40) SI/URT/88/801		*					
41) US/COI/88/002		*		*			*
42) US/RAF/89/070			*	*			*
43) US/RAF/88/102			*				*
44) US/RAF/88/263		*		*			*
45) UC/RAF/88/022		*					
46) US/RAF/88/025		*					*
47) US/RAF/88/100		*		*			*
48) UP/PHI/88/014		*					
49) UP/PAS/88/185		*					
50) US/PHI/88/235							

Project Number	Government Advice	Technical Report	Non-Tech. Report	Technical Staff Trained	Managerial Staff Trained	Environmental Issues Dealt with	Direct Action
51) SI/YUG/88/801		*					*
52) UT/INT/88/090							*
53) SI/YUG/88/802		*					
54) SI/ROM/88/801		*					
55) SI/POL/88/802		*		*			*
56) SI/ROM/88/802		*		*			*
57) SI/TUR/88/801		*				*	
58) SI/TUR/88/803		*					
59) SI/ALB/89/802		*		*			
60) SI/TUR/88/804		*		*			*
61) SI/ALB/88/802		*		*			*
62) SI/CUB/88/803		*		*			*
63) SI/CUB/88/801		*		*			
64) SI/CUB/88/802		*		*			
65) US/MEX/88/122							*
66) SI/MEX/88/802				*	*		*
67) SI/BOL/88/802				*			*
68) SI/BOL/88/803			*				*
69) SI/BAR/88/801				*			*
70) SI/JAM/88/802		*					
71) SI/JAM/88/801		*					
72) SI/BOL/89/802		*					
73) SI/BOL/89/801							*
74) SI/BRA/88/801		*	*				
75) SI/NIC/89/801		*					
76) UF/PAR/89/120		*	*				
77) SI/GUA/88/802		*		*			*
78) SI/BON/88/801		*					
79) SI/GUA/88/801		*	*				*
80) US/VEN/88/242		*					*
81) XP/BKF/88/059				*			
82) XP/STP/88/048		*					
83) US/RWA/89/192		*					
84) XP/SUD/88/067							*
85) US/SUD/88/266		*			*		
86) UC/ZIM/86/261		*		*			
87) US/RAF/88/065				*			
88) US/RAF/88/094							
89) US/RAF/88/274				*			
90) XA/RAF/88/673		*		*			
91) US/RAF/88/052		*		*			
92) UC/RAF/88/200							
93) UC/RAB/88/203				*			
94) UC/RAB/88/202				*			
95) UP/RAF/89/165				*			
TOTAL OF PROJECTS							
BY COMPONENTS	2	65	15	32	5	2	45

The attached table lists the outputs of the 95 projects reviewed. Seven types of actions conducted by UNIDO may be identified:

1) Government Advice: Since UNIDO advocates an overall approach of problems, it aims at counseling governments on policies required in order to improve the environment of industry in developing countries and thereby facilitating the efficient operation of individual enterprises.

2) Technical Report: Almost all of the projects reviewed consist at least partly in fielding experts in a developing country. Once his mission completed, the expert is generally required to draft a report dealing most of the time with the technical problems within the production system of the plant or enterprise analysed.

3) Non-Technical Report: Some projects take into account the general economic environment or some of its elements likely to have an impact on the problem tackled. Some projects also mention the purely internal managerial problems of a plant or of a sector. Outputs of these projects may take the form of a report or at least some paragraphs in the technical report.

The projects conducted including a final report on non-technical issues or some form of written recommendation on the subject are not that numerous: only 15 out of 95 projects reviewed. Six categories of concerns dealt with may be identified.

First of all, the all too rare Market Analysis for selling the plant's or industrial sector production, including sometimes a feed back action on the industrial production to make it fit potential demand. It may also include a study on the distribution system and what should be done about it. (See projects nbr. XP/TOG/88/120 and nbr. SI/BRA/88/801)).

A good manager must not only know how to sell but also how and what to buy. Some rare projects reviewed include a study on suppliers or on the inputs market. (See project XP/TOG/88/120).

Some projects also include organizational problems of an enterprise that can really affect the profitability of an industry. (See project nbr. US/TVC/88/050).

Some basic managerial knowledge in finance, book-keeping, cost-analysis have to be provided. Such internal systems have to be started from almost scratch. (See project nbr. SI/SUD/88/802).

One project required legal assistance: SI/MAG/89/802 with a view to future privatization. The same project included the possibility of a joint venture with a European Industry.

4-5) Technical or Managerial Staff Trained: Many projects include or are totally devoted to training of local staff mainly in technical fields but also, sometime in managerial ones, in order to improve plant productivity.

6) Environmental Issues Dealt with: UNIDO is supposed to take into account environmental issues. Two projects out of the 95 reviewed mentioned this topic and included some activities related to it.

7) Direct Action: Most of the experts fielded in developing countries have to help directly local industries in starting-up production, re-organizing the production process, introducing some methods of management or some pieces of equipment to local staff.

Annex 3

List of the causes given in the project documents to account for UNIDO's assistance in the area of Industrial Rehabilitation

Project Number	Conflicts	Inadequate Government Policies	Natural Hardships	UNIDO's Former Actions	Equipment Problems	Skilled Staff Problem	Economic External Problem
1) SI/MOZ/88/804	*				*	*	*
2) SI/MOZ/88/803	*				*	*	*
3) UF/MOZ/88/198	*					*	
4) GS/EGY/88/044						*	
5) SI/EGY/88/801					*	*	
6) SI/EGY/88/802					*	*	
7) SI/EGY/88/803					*	*	*
8) SI/ZAM/88/803					*	*	
9) SI/ZAM/88/802					*		
10) SI/SUD/88/801		*			*	*	
11) XP/SUD/88/122						*	
12) XP/TOG/88/120						*	
13) SI/TOG/88/801					*	*	*
14) SI/TOG/88/802					*	*	
15) US/TOG/89/075		*	*		*	*	
16) SI/ETH/88/803					*	*	
17) SI/ETH/89/802					*	*	*
18) GS/IVC/88/050			*			*	*
19) SI/SEN/88/802					*	*	*
20) US/SEN/88/269					*	*	*
21) XP/NER/88/031				*	*	*	*
22) XA/MAU/88/602						*	*
23) US/MAU/89/178					*	*	
24) SI/MLW/89/801					*	*	
25) XA/BKF/88/675						*	
26) SI/UGA/89/801						*	*
27) SI/UGA/89/803					*	*	*
28) SI/MAG/89/801					*	*	
29) SI/MAG/89/802					*	*	*
30) UF/ZIM/89/803					*	*	
31) UF/ZIM/89/092					*	*	
32) SI/ZIM/89/803					*	*	
33) SI/ANG/89/801					*	*	*
34) SI/GUI/89/801		*			*	*	*
35) SI/ZAI/89/801					*	*	
35*) XP/INT/89/125						*	
36) SI/MOR/89/801					*	*	*
37) US/TUN/88/224					*	*	*
38) SI/NIR/89/803			*	*	*	*	*
39) SI/NIR/89/804					*	*	
40) SI/URT/88/801					*	*	
41) US/COI/88/002				*	*	*	*
42) US/RAF/89/070		*			*	*	*
43) US/RAF/88/102		*			*	*	*
44) US/RAF/88/263					*	*	*
45) UC/RAF/88/022					*	*	*
46) US/RAF/88/025					*	*	*
47) US/RAF/88/100		*			*	*	*
48) UF/PHI/88/014					*	*	*
49) UF/RAS/88/185					*	*	*
50) US/PHI/88/235					*	*	*

Project Number	Conflicts	Inadequate Government Policy	Natural Hardships	Former UNIDO's Actions	Equipment Problem	Skilled Staff Problem	External Economic Problem
51) SI/YUG/88/801					*	*	
52) UT/TWT/88/090							*
53) SI/YUG/88/802						*	
54) SI/ROM/88/801						*	
55) SI/POL/88/802					*	*	
56) SI/ROM/88/802					*	*	
57) SI/TUR/88/801					*		
58) SI/TUR/88/803						*	
59) SI/ALB/89/802					*	*	
60) SI/TUR/88/804					*		
61) SI/ALB/88/802					*	*	
62) SI/CUB/88/803					*	*	
63) SI/CUB/88/801					*	*	
64) SI/CUB/88/802					*	*	
65) US/KEI/88/122					*	*	*
66) SI/KEI/88/802						*	*
67) SI/BOL/88/802							*
68) SI/BOL/88/803					*	*	*
69) SI/BAR/88/801					*	*	*
70) SI/JAN/88/802		*			*	*	*
71) SI/JAN/88/801					*		
72) SI/BOL/89/802							
73) SI/BOL/89/801						*	
74) SI/BRA/88/801					*	*	*
75) SI/NIC/89/801					*		
76) UP/PAR/89/120					*	*	
77) SI/GUA/88/802						*	
78) SI/BON/88/801					*	*	
79) SI/GUA/88/801			*		*		
80) US/VEN/88/242		*				*	*
81) XP/BKF/88/059					*	*	*
82) XP/STP/88/048					*	*	*
83) US/RWA/89/192					*	*	*
84) XP/SUD/88/067							*
85) US/SUD/88/266			*		*	*	*
86) UC/ZIN/86/261						*	*
87) US/RAF/88/065						*	*
88) US/RAF/88/094							
89) US/RAF/88/274					*	*	
90) XA/RAF/88/673					*	*	*
91) US/RAF/88/052						*	*
92) UC/RAF/88/200							
93) UC/RAB/88/203					*	*	*
94) UC/RAB/88/202							
95) UF/RAF/89/165					*	*	*
TOTAL OF PROJECTS							
BY COMPONENTS	3	8	5	4	68	71	46

Annex 4

List of Project Documents having revealed shortcomings
in the non-technical or non-technological field

- 1) SI/MOZ/88/804 Assistance to Clay Brick Production in Maputo
- 2) SI/MOZ/88/803 Technical Advisory Services to CARBOM E.E. (Coal Programme Cabinet) in planning the Rehabilitation of the Tete/Moatize Coal Mines
- 5) SI/EGY/88/801 Assistance in the Application of CAD/CAM in Railwagon Design and Manufacturing
- 6) SI/EGY/88/802 Quality Improvement of Standard and Low-Alloy Steels in Basic Oxygen Furnace
- 7) SI/EGY/88/803 Egypt Efficiency Improvement of the Misr Rayon Polyester Staple Fibre Production Plant
- 8) SI/ZAM/88/802 Technical Assistance to the Engineering Industries
- 10) SI/SUD/88/801 Improvement of Management in the Textile Industry
- 17) SI/ETH/89/802 Assistance to Sava and Addis Container Glass Factories
- 22) XP/MAU/88/602 Diversification of the Production of the Societe Arabe du Fer et de l'Acier en Mauritanie in Management and Products Diversification
- 27) SI/UGA/89/803 Reactivation of Stock Uganda Manufacturers
- 29) SI/MAG/89/802 Assistance d'Urgence a Zema Societe de Production d'Engrais Organico-Biologiques
- 34) SI/GUI/89/801 Technical Assistance for the Rehabilitation of the Pharmaceutical Industry
- 44) US/RAF/88/263 Rehabilitation of Selected Plants
- 45) UC/RAF/88/022 Preparation of a Plan of Action to rehabilitate Iron and Steel in the PTA Region
- 51) SI/YUG/88/801 Technical Assistance to the Industry of Machinery and Equipment

- 53) SI/YUG/88/802 Technical Assistance to the Industry of Drive Shifts for Agricultural Machinery
- 55) SI/POL/88/802 High Level Advisory Assistance for Robotization of Middle Presses Line at Car Factory FSM_TYCHY
- 56) SI/ROM/88/802 High Level Advisory Assistance in implementation and quality control of modern techniques for reconditioning matrices in tractors, autovehicles and agricultural machinery industry
- 58) SI/TUR/88/803 Assistance to Laurel Oil Factory in Silifke, Icel
- 59) SI/ALB/88/802 High Level Advance Assistance in Improving the Quality of Fired Clay Products and Decorative Ceramics
- 60) SI/TUR/88/804 High Level Advisory Assistance for Modernization of existing Parsan workshop
- 61) SI/ALB/89/802 Assistance for Rehabilitation of Lindane Manufacturing Plant at Durres
- 62) SI/CUB/88/803 Improved System of Diagnostic Maintenance in the Fertilizers Plant of Cienfuegos
- 63) SI/CUB/88/801 Technical Assistance for Establishing the Operation of the Catalytic Cracking Plant at the Nico Lopez Oil Refinery in Havana
- 67) SI/BOL/88/802 Assistance to Comibol (Bolivian Mining Corporation) for Production of low-carbon steel Ingots for Re-rolling
- 71) SI/JAM/88/801 Assistance to the Brazilian Plastics Industry
- 73) SI/BOL/88/801 Emergency Assistance to the El Puente Cement Factory, Tarija
- 77) SI/GUA/89/802 Assistance in Introducing "Technology of Repair and Maintenance of low-cost Agricultural Tools"
- 78) SI/HON/88/801 Assistance to Industrias Quimicas Conrad Ltd
- 79) SI/GUA/88/801 Urgent Assistance to the Salinas Wu-Atzan

Annex 5

List of Project Documents Having revealed Shortcomings
in the field of environment

- 4) US/EGY/88/044 Upgrading of Technical Capabilities of Selected Shoe Factories
- 6) SI/EGY/88/802 Quality Improvement of Standard and Low Alloy Steels in Basic Oxygen Furnace
- 7) SI/EGY/88/803 Egypt Efficient Improvement of the Misr Rayon Polyester Staple Fibre Production Plant
- 14) SI/TOG/88/802 Industrie de la Chaux
- 29) SI/MAG/89/802 Assistance d'Urgence a Zema Societe de Production d'Engrais Organico-Biologiques
- 30) UF/ZIM/89/803 Assistance to Messrs. Non-Ferrous Die-Casting (Pvt) Ltd
- 34) SI/GUI/89/801 Technical Assistance to the Pharmaceutical Industry
- 35) SI/ZAI/89/801 Assistance a la minoterie Madis a Sake/Goma Kivu Zaire
- 39) SI/NIR/89/804 High Level Advisory Services on the Reactivation of the Nigerian National Paper Manufacturing Company Ltd (Wopin)
- 42) US/RAF/89/070 Assistance a l'industrie du cuir
- 44) US/RAF/88/263 Rehabilitation of Selected Plants.
- 45) UC/RAF/88/022 Preparation of a plan of Action to Rehabilitate Iron and Steel in the PTA Region
- 47) US/RAF/88/100 Regional Hides and Skins, Leather and Leather Products Improvement Scheme
- 48) US/PHI/88/014 Diagnostic Survey of the Plastics Transformation Industry
- 49) US/RAS/88/185 Assistance in the Development of Marine Resources-based Industries in the Selected Pacific Islands Countries

- 50) US/PHI/88/235 Plastics Research and Development Unit (PRDU)
- 57) SI/TUR/88/801 Eskichir Textile Mill Waste Water Plant
- 58) SI/TUR/88/803 Assistance to Laurel Oil Factory in Silifke, Icel
- 59) SI/ALB/89/802 High Level Advance Assistance in Improving the
Quality of Fired Clay Products and Decorative
Ceramics
- 61) SI/ALB/88/802 Assistance for Rehabilitation of Lindane
Manufacturing Plant at Durres
- 62) SI/CUB/88/803 Improved System of Diagnostic Maintenance in the
Fertilizers Plant of Cienfuegos
- 64) SI/CUB/88/802 Technical Assistance for the Production of Rubber
Stoppers used for Pharmaceutical Products
- 65) US/MEX/88/122 Projet de Cooperation dans le domaine
Agro-Alimentaire entre la France et le Bresil
- 67) SI/BOL/88/802 Assistance to COMIBOL (Bolivian Mining Corporation
for Production of low-carbon Steel Ingots for
Re-rolling
- 71) SI/JAM/88/801 Assistance to the West Indies Pulpand Paper Group
of Companies
- 75) SI/NIC/89/801 Improvement of processing Methods and Product
Quality in COTEXMA
- 85) US/SUD/88/266 Product and Process Research to create the basis
for the Rehabilitation of the Barbanoussa dairy
plant by converting it into a Karkadeh powder
production plant