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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

**THE ROLE OF INDUSTRY IN POST-EMERGENCY
RECONSTRUCTION AND RESTRUCTURING**

**A PROPOSAL FOR A UNIDO-
INTER-AGENCY PROGRAMME
OF TECHNICAL COOPERATION**

*20 Dec 1995
Revised*



THE ROLE OF INDUSTRY IN POST-EMERGENCY RECONSTRUCTION AND RESTRUCTURING

**A PROPOSAL FOR AN INTER-AGENCY PROGRAMME OF
TECHNICAL COOPERATION**

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SECTION I. THE CHALLENGE OF POST-EMERGENCY ASSISTANCE

The recent, and often continuing damage and destruction to industrial production and service facilities as well as to housing and civil engineering structures in countries throughout the world due to natural disasters and civil strife is well known. At the same time, it is also common knowledge that the volume and duration of emergency aid programmes providing food supplies, health services and shelter, as well as the movement and distribution of goods and services and the relocation of people can be reduced - and the sustained socio-economic development of the community fostered - in direct proportion to the speed with which local industry and industrial infrastructure is rehabilitated and the all-important industrial culture revived.

Therefore, the earlier a reconstructed and, where necessary, restructured, pre-existing local industry can provide the required basic needs, from bread, milk-based products, meat products and baby food through medicines to building materials and tools, the sooner can the humanitarian assistance provided by the international community be turned into financial assistance and an investment in the long-term industrial base of the country - and a contribution made towards recreating a sense of socio-economic normality in the population.

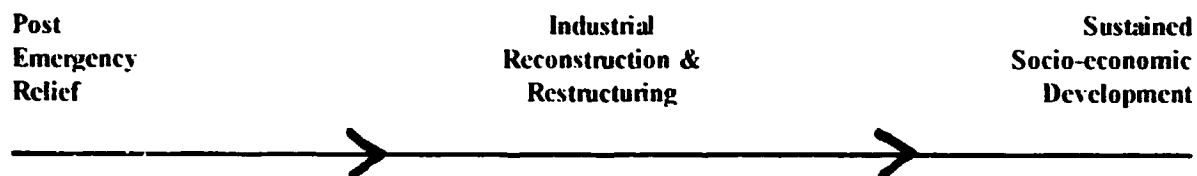
For precisely this reason, UNIDO - as the United Nations agency mandated to cooperate with developing countries and economies in transition to foster their industrial development - is particularly conscious of the need for it to act - where possible, jointly with other agencies - to respond to the needs of countries such as Rwanda, Angola, Palestine, Haiti or Bosnia and Herzegovina in the industrial sphere. In many of these countries the complex pre-war industrial structure - ranging from food and textiles production through electricity pylons and engine manufacturing - the skilled labour force, and the transport and industrial infrastructure, while damaged, destroyed, or dispersed, is nevertheless present and need not be re-built from scratch.

Quite to the contrary, it has been found that in some cases the industrial installations have survived the natural disasters and civil wars relatively unscathed and need only repair and restoration work costing a fraction of new similar units. And the management and senior staff are only too happy to quickly be given the opportunity to contribute to the rehabilitation of the country and the restoration of pre-war socio-economic activities. It is particularly the strength of this local commitment which has encouraged UNIDO to make this proposal for a joint programme to the UNDP and other agencies present at the Colloquium. **To fulfil this commitment, however, immediate industrial assistance, even in the short-term, is not only possible but imperative.**

In this situation UNIDO feels that piecemeal efforts will not only fail to achieve the symbiotic impact that can result from an integrated, multidisciplinary programmatic approach, but indeed could lead to waste and dissipation of effort and financial resources. It is for this reason that UNIDO strongly supports the consolidated inter-agency approach. It also means that UNIDO should be involved from the beginning of the process, even if only on a limited scale, to ensure that the proper foundations are laid for later work in the areas of reconstruction and restructuring in successive stages. One example of this inter-agency cooperation was the recent UNDP-UNIDO-UNOPS-DDSMS/UNOV joint mission to Croatia, Bosnia & Herzegovina and the FYR of Macedonia. Another was the recent UNDP mission to Croatia to assess the war damage and to prepare a report for the Secretary-General to submit to the General Assembly in pursuance to GA Resolution 49/21/G.

An example of the programming approach is the recent "UNIDO Programming Strategy for Services to the Palestinian Peoples" - and another is the UNIDO contribution to the recent Angolan Round Table on the Community Rehabilitation Programme.

A crucial element of UNIDO's integrated, multidisciplinary programmatic approach moves beyond the static dimension and views industry as an integral part of the entire dynamic relief-development process, which always aims toward achieving sustained socio-economic development:



Within this overall process, the assistance which UNIDO could offer focuses on the industrial reconstruction and restructuring states, but is also linked forward and backward to the other stages. Involvement in the early stages ensures a good base is prepared for future work, it reduces the load on emergency aid by transferring it to the basic rehabilitation of essential industry, and at the same time industrial reconstruction and restructuring is initiated. Subject only to the availability to the Organization of the necessary financial resources, UNIDO activities could commence immediately and would include, among others, the following areas:

- restoring equipment and developing immediately required products and designs for priority industrial sub-sectors;
- creating an "industry for post-war reconstruction", i.e. focusing on satisfying the immediate needs for the reconstruction process;
- promoting enterprise development and foreign industrial investment; and
- alleviating the damage of war to the environment and building the basis for cleaner production and an environment-friendly industrial reconstruction and restructuring.

Other services could be provided as a second stage component of the types of services listed above. These areas, where UNIDO's experience and knowledge could be of paramount importance, would include:

- assisting the fostering of small- and medium-scale enterprises;
- designing industrial policy and privatization programmes;
- optimizing the process of enterprise restructuring; and
- creating an enabling industrial institutional support structure

In all of the areas mentioned explicitly above - as well as other areas where UNIDO has a mandate and would be able to assist - it is obvious that the Organization has a significant role to play. It is equally obvious, however, that it can play this role better in cooperation with the other agencies in the United Nations system. This point becomes very clear in studying the "Inventory of possible post-conflict peace-building activities" prepared by the Task Force on Post-Conflict Peace-Building, and the reader is referred to UNIDO's detailed contribution to the inventory.

As a general proposition the approach to post-emergency reconstruction and restructuring selected must be:

- ❑ integrated and multidisciplinary;
- ❑ rapid in terms of resource mobilization and start-up;
- ❑ linked to long-term industrial development and sustainability;
- ❑ oriented towards employment and income generation;
- ❑ sensitive to opportunities for new technology; and
- ❑ conducive to environmental protection and energy conservation.

These concepts are presented in more detail in section II where the paper presents concrete examples of different types of urgent interventions which UNIDO can make at the plant level. Typical areas of possible UNIDO intervention mentioned above which could form the core of a UNIDO-inter-agency programme are discussed in section III.

SECTION II. THE UNIDO APPROACH

A. An Integrated and Multidisciplinary Approach

In any initiative undertaken, the programme would be designed around a multi-disciplinary team approach. Needs-assessment teams would identify the needs and priorities of the country in specific sub-sectors or in the area of industrial policy in general, would juxtapose this with the knowledge, long term experience and development objectives of UNIDO and prepare integrated programmes that take the fullest advantage of the resulting areas of tangency. The teams would work in cooperation with the local administration and representatives of local industry and, most importantly, in close coordination with other international efforts in this field.

UNIDO would particularly wish to work closely with UNDP and other United Nations organizations and international and national aid agencies. This would help make the urgently needed assistance as multifaceted and cost-effective as possible, with UNIDO carrying out this cooperation with a transparent division of labour based on its mandates and comparative advantage in delivering technological inputs and technical cooperation for ecologically sustainable industrial development.

B. Rapid Resource Mobilization

Given the urgent need for support in at least a few priority areas, the soonest possible mobilization of financial resources to cover the first wave of assistance is absolute key to efficiency in this context. UNIDO has therefore initiated activity in this respect at two levels. The present paper, which outlines the categories of activities the Organization could take responsibility for in order to sound out donor interest in such activities represents one of these levels. The other level of preparatory activities is represented by staff member missions to countries such as Angola, Armenia, Bosnia-Herzegovina, Croatia, Haiti, Iran and Palestine to define the proposed involvement of UNIDO in more detail.

In respect of input mobilization, the required expertise needed to cover priority sub-sectors, when it can not be provided due to pre-existing commitments of UNIDO staff, has already been identified or easily available from UNIDO's extensive roster of experts. In the cases where equipment or replacement parts need to be included in the most urgent assistance, detailed lists of such items complete with indications of recommended suppliers are already available. UNIDO's experienced procurement service can ensure effective purchasing and shipment at a most competitive cost. This means that these inputs could be delivered very soon after funding has been secured in a way which safeguards quality as well as cost-effectiveness.

C. Links to Long-Term Sustainability

This point is particularly important to UNIDO, which strongly believes that the post-emergency reconstruction and restructuring assistance provided to the industrial sector, in addition to responding to urgent needs (possibly even of a humanitarian nature, i.e. satisfaction of socio-economic requirements related to health, food and shelter), should comprise a built-in element of socio-economic development targeting the needs of the society after recovery. Without elaborating this point it would, for instance, be contrary to UNIDO's basic approach to revitalize or create industries which would not appear to be viable under normal post-recovery economic conditions.

D. Employment and Income Generation

In societies suffering from severe natural disasters or torn by war the majority of the population are often without a job and without any source of regular income. Apart from the hardships this inflicts upon the individuals it signifies a break-down in normal market mechanisms. There is very little cash in circulation and a sense of extreme remoteness from socio-economic normality despite a reduction in the level of hostilities. A central element in the UNIDO approach to post-emergency assistance is, therefore, the earliest possible re-creation of as many jobs as possible. In light of the overall priorities for UNDP programmes, we feel this would also be agreed as an element in a common UNIDO-UNDP-inter-agency programme.

This would be achieved, on one hand, by favouring the employment under UNIDO project activities of national consultants and other project staff rather than internationals and, on the other hand, by giving priority to labour intensive production technologies, at least in the early phases of the reconstruction process. In this respect we have, for example, recently redesigned our programme of work on an industrial support strategy for the Republic of Croatia to make the fullest possible use of the excellent national experts available in the country.

Both in the case of the response to emergency needs and in the preparation of the grounds for a sustainable rehabilitation, the role of women is of crucial importance in the promotion of income generating activities which will not only address immediate and future needs (due to war casualties, the number of women headed households is likely to have increased) but will also benefit the economy as a whole. It is thus of significance to involve women as full actors in the process and not only as recipients. One example of this is the cotton ginning project proposal for Afghanistan under consideration by UNIDO and UNORSA, which is intended to stimulate the revival of cotton and textile production, an industry in which women traditionally play an important part through textile related household and cottage industries.

Depending on the priorities of the recipient countries, women-specific interventions could be foreseen in areas such as policy and regulatory advice and SMEs. These actions should be seen as part of an overall approach that addresses the problem of redressing previous inequalities in general (including, but extending beyond, the case of women in particular). This point is treated in more detail in UNIDO's contribution to the UN System Inventory referred to earlier.

E. Technology Upgrading

The rehabilitation of damaged industries is seen as a 'window for change' in several ways. Rather than restoring old industries to the level of technology they represented before the war, the rehabilitation process should ensure that obsolete technologies and related equipment are scrapped and replaced (if justified) with up-to-date processing equipment. This is of importance not only to bridge the technology gap which already existed before the war between the recipient countries and competitors with whom the industry may now be forced to compete much more than before, but it is also the most appropriate way to ensure the environmental soundness of the production.

F. Environment Protection and Energy Conservation

Conflict can and invariably does have a severe and long lasting effect on the environment, and through this on the health of the population, in particular through the effect on agro-industry, on water supply and on air pollution (e.g. from out-of-control fires).

UNIDO's approach in this respect is, in the short-term, to arrest these effects before chronic problems set in. In the long-run, the goal is to achieve ecologically sustainable, safer, more efficient and cleaner industrial development. Furthermore, in order to enforce the sustainability of development, UNIDO encourages energy efficiency programmes and the use of renewable energy and resources where possible, thereby contributing to a cleaner environment, reduced pollution-related illness and improved industrial efficiency and profitability.

At all times UNIDO acts to foster the integration of environmental and industrial policies in a manner that does not adversely affect the overall objective of industrial development. In aiming to achieve this in the transition from post-emergency relief to socio-economic development, UNIDO follows a path of activities from arresting further damage and damage rectification to building a framework within which industry is reconstructed and restored in a cleaner and sustainable environment.

Finally, measures are taken and encouraged with regard to the safety aspects of industry and industrial development.

SECTION III. TYPES OF INTERVENTION

The need for an emergency programme for rehabilitation and restructuring means that policy makers, planners and enterprises are all faced with a different strategic decision-making environment than in the case of normal industrial investment decisions. The weight given to short-term priorities is greater than normal and the time-scale for investment to come on-line is more compressed; the high pressure for income generation in a population with the extremely high unemployment rates typical of the countries in question amounts to preference for labour-intensive projects with minimum start-up times; and the damage caused by war, including the total disruption of normal economic activities, naturally reduces the availability of local financial resources.

This concern for analyzing the specific needs of the country in question and designing the corresponding programme for immediate industrial restoration as well as for post-war industrial rehabilitation is a further reflection of the UNIDO philosophy of ensuring that post-emergency assistance is integral to sustained socio-economic development. This would be manifest in any UNIDO-inter-agency programme for assessing the viability of local production of industrial products for post-emergency assistance as well as the required industrial services for industrial reconstruction and restructuring.

A. Restoration of Essential Industrial Production

In the eyes of the local population and planners, the most urgent requirement at the early stages of post-emergency relief is to bring pre-war production facilities back into production. This desire applies especially to those industries and technical installations which would feed the local market with products regarded as essential for the most basic survival, such as drinking water, staple food items, pharmaceutical items and medicinal supplies and materials for self-help repair of damaged homes and social institutions. However, seen in a slightly longer perspective the need is of a much more general nature, involving

production units in all industrial sub-sectors. The resumption of industrial activities would signal a return to some degree of normality and, in this respect, have a non-negligible psychological effect.

The level of damage sustained by the industry varies considerably from plant to plant but, as a general rule, in a war situation the eventual damage from shelling and direct fighting close to the premises is always compounded with further deterioration of the equipment and installations due to lack of maintenance and the unavoidable pilferage. The procurement of equipment and replacement parts needed to restore production and their installation together with a proper refurbishing of all plant and equipment could be an important area of intervention for UNIDO.

It is emphasized that the restoration programmes must be based on an objective needs-assessment, both of the individual plants under consideration and of the relative merit and priority of alternative programmes. It is equally important that the opportunity for technology upgrading, referred to above, is seized at this point and the rehabilitation of obsolete technologies and worn out equipment avoided. Provision of adequate training in operation and maintenance as well as product development and marketing should be part of the package.

B. Industry Serving Post-war Reconstruction

The physical damage suffered in such circumstances is often considerable, and the repair or replacement of damaged or destroyed buildings, bridges and other civil engineering structures as well as the restoration of public services and facilities including water, gas and electricity supplies, public transportation and telecommunication are among the priorities of the reconstruction programme.

The task can be of monumental dimensions and may take years to complete, even with a large UN system programme. It is, on the other hand, also a major opportunity to mobilize available local resources including know-how, skills, raw materials and production facilities, not to mention the national construction sector itself. To make optimum use of the local capacity to produce the materials needed for the reconstruction process and to engage local construction enterprises in the work at the earliest stage will not only significantly reduce its cost, but equally significant, it will constitute a major contribution towards restoring normal industrial and economic activities and help to reduce the dependence on international relief aid.

Support to the building materials and construction industry is an important component of this intervention, as is also the rehabilitation of mechanical and electrical repair and maintenance facilities and of the manufacture of basic engineering components.

C. Enterprise Development, Feasibility Analyses and Investment Promotion

Much of the light industry in countries such as Rwanda, Angola, Palestine, or Bosnia has been highly damaged by the war and in many cases the industrial investment required will have to come, often in large part, from abroad. Working hand-in-hand with local promoters - trained, where appropriate, in the required business skills under UNIDO programmes in entrepreneurship development and in small- and medium-scale enterprise development - UNIDO's experts in industrial investment promotion could tailor-make an integrated programme of investment promotion measures and joint venture initiatives.

Despite - or because of - the extent of the war damage, no major new investments should be undertaken without an appropriate pre-investment analysis of the financial, technological, market, managerial and environmental aspects of the proposed new investment projects. Such pre-investment analyses for new and reconstruction investment in the industrial sector would, in addition to the obvious need to satisfy local demand, pay particular attention to the opportunities of capturing foreign markets and, thus, to the creation of a sustainable industrial base for the country for the future.

D. Alleviation of Environmental Damage

Environmental damage of land and water, due to chemical pollution and other industrial leakages, makes the land unfit for farming and water unpotable, thereby destroying a vital element which supports the local population. Air pollution e.g. from industrial hydrocarbons etc. exaggerates health and breathing problems with long term effects, and the carriage of abandoned and gutted vehicles, destroyed buildings and rubble clutter the countryside, making the use of agro-machinery dangerous and difficult.

The alleviation of this damage is the first step to be taken, if normal life is to be restored. This approach generally comprises:

- assessment of damage and need requirements;
- rectification of damage, by chemical treatment, control and industrial repairs; and
- clean-up operations of water, agro-land and air.

For the best and most efficient results UNIDO assists, advises and encourages damage rectification which both removes the waste and employs it usefully. This includes: waste recycling policies e.g. using rubble to form aggregate for construction and repair work, collecting and selling or melting down scrap metal etc; salvaging functional components and reusing them as essential spare parts, e.g. salvaging vehicle spares from abandoned vehicles; treatment of ground and water to remove industrial pollutants such that they are no longer health threatening and can support agricultural use; supporting clean-up operations using local production facilities to manufacture small-scale, labour intensive equipment for removal processing and recycling of urban waste.

In addition to assistance and advice UNIDO offers management training in environmental awareness, techniques and approaches, and help to promote public awareness in this field. Maintenance, repair and monitoring techniques are also communicated, and advice on policy formulation and execution available.

The second stage after repair and restoration, is that of improving industry's approach to and attitude on environmental issues and, with this constantly in mind, to take steps towards industrial reconstruction and restructuring.

To foster cleaner production and the development of a more environmentally friendly industrial sector, UNIDO offers advice and assistance based on its own experience and expertise. In particular, help is offered regarding the introduction of cleaner technology and techniques, so as to reduce, or where possible, eliminate pollution. Advice is also given on the maximisation of the industrial output obtainable from a given amount of resources, so as to ensure the most efficient use of human, renewable and non-renewable resources. In addition to being beneficial in reducing/eliminating pollution, minimising waste and improving environmental quality (thereby also alleviating pollution related illness), use of renewable energy and cleaner technology also brings enhanced efficiency and profitability.

In this second stage of development assistance includes training in control management and monitoring techniques, and advice on use of ecologically sound agro-chemicals and industrial techniques.

E. Small- and Medium-Scale Industrial Enterprises

As a special case of entrepreneurship and enterprise development in general, in the area of small- and medium-scale enterprises (SMEs) UNIDO has a long experience in assistance to small-scale manufacturing units to upgrade their commercial and technical skills and meet quality requirements. This experience could be placed at the disposal of the existing and future private entrepreneurs in the countries in order to strengthen the performance of individual enterprises. Equally important would be the development of transparent technology and market information systems for the networking of small-scale producers based on cooperation and complementarity.

Under such present circumstances SME development is given high priority both by local authorities and UNIDO and the support to this segment of the economy will be designed in such a way that the enterprises as soon as possible can take ownership of the institutional framework for these support services. With this in mind, an eventually self-financing institution, a Local Development Agency, should be established - as part of any joint UNIDO-inter-agency programme - as a matter of priority.

The project for assistance in reconstruction of the private sector through expansion of products capability and business efficiency of the private sector entrepreneurs in Afghanistan, which was begun in 1990 together with UNDP, is just one example of possible UNIDO involvement in this subsector.

F. Industrial Policy and Regulatory Advice

The Organization would also through its collaboration with local authorities provide advice on industrial policy and strategy conducive to creating an enabling environment for industrial reconstruction in the context of the emerging market economy.

At this critical juncture, and in cases where it has not been done previously, it would seem appropriate to give special emphasis to enhancing private sector development to take full advantage of the entrepreneurship potential of the local population and to support the Government's policy in this respect.

G. Restructuring of Industrial Enterprises

Enterprise restructuring services are a further central dimension of UNIDO activities which are central to the reconstruction process. Enterprise restructuring, in the form of rehabilitation and modernization programmes, during the process of industrial reconstruction, can ensure that the optimal use of existing industrial capacities is secured through technological upgrading and industrial transformation including the introduction of market economy oriented management strategies. Only by such integrated efforts can the foundation be laid for future sustained socio-economic development. One feature of UNIDO's approach which is of direct relevance to this process - and which we would propose should also form a key component of the UNIDO-inter-agency approach - is the explicit effort at the coordination of measures at the enterprise, institutional and policy levels.

H. Support to Industrial Institutions

Although reference has been made to this important aspect of industrial development in the above, it must be explicitly stated that the creation of a national capability to ensure that the full range of industrial services are available to the industry is key to the future success of the sector. Thus, advice will be given on the establishment of institutions and mechanisms to deal with such important matters as:

- human resource development;
- technology promotion and transfer;
- environmental protection;
- joint venture negotiations; and
- standardization and quality assurance.

Initially direct assistance is provided in these fields in direct support of the reconstruction process, but institutional development to ensure the continuation of the related service functions is part and parcel of the cooperation during the transition phase.

SECTION IV. PRIORITY INDUSTRY EXAMPLES

A. The Food Processing Industry

A vivid example of the way UNIDO can intervene at an extremely early stage in the post-emergency relief, sustained socio-economic development process is the recently completed UNIDO project responding to a UNICEF request to provide technical assistance to Sarajevo to increase the nutritional value of biscuits produced by the Sarajevo municipal bakery "Klas-Sarko". In 1993 UNIDO provided earlier technical assistance which established a scheme to produce enriched bread through the addition of vitamins and minerals to the flour at the local central bakery.

The success of this project of enrichment through micro-nutrients led to the official request to produce biscuits fortified with proteins, vitamins and minerals. In taking a broad perspective of the problem being faced, UNIDO also made proposals to rationalize the packaging of the products and extend their shelf-life - thereby adding to the potential strategic food reserve for Sarajevo.

As a result of this cooperation with Bosnia, the bakery as well as the up-stream flour mill and the closely related pasta manufacture requested the support from UNIDO in the rehabilitation of its equipment, for which spare parts have been unavailable for over two years and which, therefore, only operate with considerable difficulties and loss of a significant part of the active production time and thus a reduction in output. This assistance would raise the level of supply of bakery products to a level more compatible with the needs of the population. UNIDO has now obtained financing for the extension of the bakery project, which includes both technical assistance to the enterprise from international experts, as well as the provision of key items of equipment.

This is only one specific case of potential UNIDO services that can be delivered for restoring machinery and equipment and improving the quality of products in the food industry. Obviously, it could also be extended to a range of other similar or related plants as well as in other sub-sectors of the food industry. Indeed, other programmes have been carried out, for example in Latin America in the vitamin A fortification of sugar, and the Organization wishes to explore the possibility of vitamin A fortification programme in cereal flour, rice, maize and cooking oil, etc. in Africa.

Another example that could be noted here is the request to provide assistance in baby food production for the victims of Chernobyl. Given the inter-agency approach to aid to Chernobyl, this would appear to be an excellent area for UNIDO-inter-agency cooperation, and the Government of Belarus (where the impact of the disaster was the greatest) strongly supports these efforts.

B. The Pharmaceutical Industry

UNIDO's complete package of assistance includes, besides the personnel component of technical cooperation, the installation of the equipment, its validation, and its run up. Part-and-parcel of this package is the establishment of a quality assurance system in line with current 'Good Manufacturing Practice' principles, including systems for documentation, validation and control. Equally important will be the support to companies to ensure their ability to, eventually, market their products outside the country, once the conditions allow. As in all cases, such work is, of course, done in cooperation with the relevant UN agencies, in this case the WHO.

One example of the type of work UNIDO wants to do in this area is to assist the Government of Angola in the storage and distribution of medical products, including the training of Angolan nationals in modern procedures in this area. Another is the UNIDO effort to obtain funding to carry out a detailed programme of restructuring in Bosnalijek Ltd. - the only pharmaceutical producer in Bosnia & Herzegovina. A multi-phase programme, including both technical assistance from international experts and selective equipment purchases, has been designed (in cooperation with WHO) and is ready for implementation (subject

only to the availability of financing). A third UNIDO effort in this sector is under consideration in Afghanistan. This concerns the provision of factory level assistance for the rehabilitation of the Hoechst Medicine Factory.

C. The Building Materials and Construction Industry

A priority sector, which is of key importance to a reconstruction programme is housing and physical infrastructure. Here the localized damage is often devastating and demand for immediate relief is correspondingly high. Cooperation between UNIDO, the UN system, and the local actors could be directed at identifying key production facilities for building materials and the technical, human resource development and investment inputs needed for their rehabilitation. UNIDO experience in such cooperative efforts in crisis areas is extensive and covers areas as wide as sawmills and joinery mills, lime producers, brick and tile plants, cement plants, enterprises producing concrete products and glass factories. This experience covers the whole world - from Armenia to Angola, China to Croatia, and Iran to Indonesia.

Assistance to selected producers and construction enterprises should cover the full range of the building materials needed for the physical reconstruction. It will address the needs of the entire rehabilitation process from assessing the condition of these plants, estimating the inputs needed either to re-establish production or increase it substantially, determining the local availability of raw material and supply possibilities as well as sources of energy, evaluating existing staff and determining training needs to cope with an emergency production programme, determining the range of items to be produced, to the actual start-up of production and advising on the most appropriate application of the materials in the building sector.

UNIDO could field a team of experts to carry out a detailed sub-sectoral needs assessment mission to identify the facilities where assistance can begin, to assess the conditions in the plants and the quality and availability of local raw material and utility inputs, to provide the required training and agree on the appropriate designs for the materials and products to be produced, and to commence production.

The example of such activities can be seen in Afghanistan. Preliminary research already having been carried out by UNHCS-HABITAT, UNIDO has been approached to provide centralised technical support to the plans to rehabilitate the traditional building materials industries in Afghanistan. UNIDO is also presently considering providing factory level assistance rehabilitation of the cement factory in Gulbahar.

D. The Engineering Industry

A similar, integrated programme to rehabilitate war-damaged production facilities in the engineering industry would survey the entire engineering sector and design custom-made assistance packages for individual enterprises. Extensive UNIDO international experience in rendering technical assistance related to the production of equipment for the electricity-generating and telecommunications industry as well as in the electrical and mechanical engineering sector would be directly applicable to reconstructing the damaged production facilities for electricity pylons and small engine manufacturing.

In each of these areas a number of projects have already been undertaken by UNIDO's engineering staff, Vietnam being one country, for example, where UNIDO has developed a very extensive engineering industry-based programme. Support for the local engineering industry in a country emerging from crisis to allow it to produce a number of the products required for industrial reconstruction and restructuring is also crucial. Such a programme can reduce the import of those types of equipment which fall within the technological capability of the country, thereby simultaneously contributing to the long-term development of the economy.

In the telecommunications industry a crucial cooperation programme could include, for example, the development of a project to provide the national government with a computerized management information system to allow them to manage the international assistance they receive in the most rational manner.

SECTION V. ENVIRONMENTAL SUSTAINABILITY

In every war severe damage is done to the environment. Industry is well placed to help alleviate this and simultaneously act as a major employment generator. Thus, for example, millions of tons of building debris generally need to be disposed of. UNIDO cooperation with the Government in the classifying and processing of building debris for reconstruction and shelter would analyze the scope for economic recycling of part of the available rubble and advise on the most cost effective disposal of the remainder. The re-use of at least a part of the demolition material would signify a reduction of the pressure on the demands for the extremely limited natural resources available for aggregate production and other manufactures of building materials available within the limits of the confrontation line. A concrete proposal in this respect has, for example, just been made to the Government of Bosnia & Herzegovina.

In disaster areas, rivers and ground water often become polluted with sewage and industrial waste-water. Through assistance in the establishment of municipal waste-water treatment plants and the rehabilitation of existing sewage systems, UNIDO could survey towns and cities to assess the total requirements, undertake remedial work on damaged treatment facilities, and carry out feasibility studies for follow-up assistance - the latter perhaps being part of a UNIDO-inter-agency programme.

Due to leakages from hydraulic systems of damaged military and civilian vehicles as well as from electrical condensers and transformers, the soil and ground water in numerous locations is often contaminated. UNIDO's immediate assistance could take the form of the design and development of an action plan for decontamination of soils and waters and for the disposal of still existing depositories of waste oil. Here and elsewhere, UNIDO could also assist in promoting the investment required in the area of hazardous waste management to carry out the concrete proposals for the resulting, longer-term, follow-up action.

Allied to this assistance is the proposal for cooperation between UNIDO and local authorities to assess the current position with respect to spent mineral oil recovery and recycling. The assistance would, on the basis of the analysis, select the most appropriate of the numerous available technologies and propose an action plan to minimize environmental contamination through carrying out a programme of industrial-sector measures designed to improve environmental sustainability - again, perhaps with UNIDO-inter-agency follow-up. In this area UNIDO has recently completed work in some 15 countries.

As a result of the war damage inflicted on water purification plants and the war-induced shortage of chlorine gas, schools, hospitals, refugee centres, old peoples homes, etc. generally have no regular access to disinfected water supplies (and often no access at all). It is imperative that this emergency situation should be remediated immediately to alleviate the suffering of civilians. UNIDO assistance would consist of the provision of on-site chlorine generating units installed in various key establishments including measures to ensure that the required inputs - such as sodium chloride of acceptable purity and reliable electricity supply - were made available, and that equipment of the appropriate capacity and design was correctly installed and run-in. Proposals in this respect were one element of a recent wide-ranging UNIDO report on 'War and the Environment' in Croatia that is about to be updated.

Another classic example of the approach proposed by UNIDO would be in the area of assistance in treatment of solid urban waste. Here the optimal employment-generation-maximizing approach is identical to the local-content-maximizing approach: (re)create local production facilities to manufacture small-scale, labour intensive equipment for the removal, processing and recycling of urban waste. The "solution" of importing large-scale, capital-intensive western equipment to deposit tons of unprocessed waste in a central dump site is quick and easy and may as a short-term scenario be necessary to clean up the streets in war-torn country.

UNIDO also assists on establishing the monitoring of air pollution levels. With the right institutional and legislative support this allows the control of industry with regard to the level of damage to the environment and the effect on the health of the local population.

SECTION VI. A THREE-PHASED PROGRAMME OF ASSISTANCE

The programme outlined in the preceding chapters is conceived as a framework for UNIDO's intervention - together with the UNDP and other agencies where possible, and always together with local actors. It will be refined in each case, and this is to be considered as only an example of the type of assistance UNIDO could provide.

In the spirit of integrating the contribution of UNIDO with the overall efforts of the international community, it is generally necessary to field a series of missions of Secretariat staff member to establish direct contact with both local authorities and to assess the scope for UNIDO's future involvement.

Experience in other countries suggests that UNIDO could undertake the following three stage plan, subject to financial support from members of the international community. The experience and capacity required to implement the programme exists and activities could be initiated at very short notice. However, since UNIDO's own resources are very scarce, here is another area where a UNIDO-UNDP programme could be proposed. We would also see a clear role for "white helmets" or national volunteers in UNIDO's work in these programmes.

It should be clearly stressed that the programme elements outlined below by no means represent an exhaustive list of potential areas of UNIDO involvement, but only what is considered the essential elements of such a programme where UNIDO and other agencies could cooperate.

Many of the programme elements are available in the form of project proposals elaborated in more detail, and for all of them sufficient information is in any case available to allow the immediate preparation of concrete proposals with fairly detailed breakdowns of budgetary requirements.

A. PHASE I: IMMEDIATE NEEDS ASSESSMENT AND TASK DEFINITION

The following immediate measures would be taken by UNIDO, through the fielding of staff members and consultants, in close cooperation with local authorities and the UNDP:

- Needs assessment missions to selected cities and regions covering a number of priority industrial sub-sectors, including, among others:
 - building materials;
 - pharmaceuticals and health care supplies and equipment;
 - food processing and food product development;
 - electrical engineering and telecommunications; and
 - school supplies and school equipment.

- Technical assistance missions to selected industrial enterprises to carry out diagnostic analyses and to develop a plan of action for their restoration and reconstruction including the formulation of a proper business plan. The enterprises would be selected in cooperation with the Government and UNDP.

- Industry/Environment impact assessment missions to major cities and surrounding areas covering, among other problem areas:
 - water quality and sewage treatment;
 - building debris and demolition rubble recycling;
 - municipal solid waste treatment;
 - decontamination of soil and surface water.
- Outposting of a UNIDO representative or the posting of a field representative (JPO or UCD) in the UNDP Office to ensure optimal coordination of all UNIDO interventions and other industry related activities and with the industrialization policies of local authorities) and to provide the government authorities with the required, on-the-spot specialized expertise in industrial development.

B. PHASE II: URGENT ASSISTANCE TO PRIORITY INDUSTRIES

Based on the priorities already laid down by the government and other international actors, and backed up by the findings of the missions referred to above, the following most urgent interventions at plant level will be undertaken:

- Restoration of full or partial production capacity to the most essential food industries (e.g. flour mills, bakeries, dairy plants) which have managed to maintain a certain production throughout the war or are capable of rebuilding it, provided that technical assistance and investments are brought in the form of equipment and spare parts, technology upgrading and updating.

Depending on the country in question, there could be very specific food industry projects, such as the rehabilitation of the fisheries industry, be it continental or fluvial fisheries. Or they could extend at the other extreme to the work of chemical industry colleagues in salt production and iodization.

- Rehabilitation of selected local building materials industries and construction enterprises and establishment of new labour intensive production units to provide essential material inputs for home self-repair or reconstruction, repair of schools and other public buildings, as well as for urgently required civil engineering works including repair of priority roads and municipal facilities. The assistance should allow the start of manufacture of at least the following types of materials:

- crushed aggregate;
- ready-mix concrete and concrete products;
- asphalt;
- roofing tiles;
- doors, window frames and roof trusses;
- modular wooden bridges;
- unfired, cold-pressed soil blocks;
- thermal insulation materials; and
- polystyrene window glazing.

Selected, urgently required construction equipment would also be reconditioned or supplied as a matter of urgency.

- Introduction of new or better adapted structural systems for the construction of housing, schools and other essential public buildings emphasizing the use of locally available material resources, especially wooden components and structural elements. In regions with access to timber, the application of prefabricated wooden building elements together with an appropriate architectural design concept could significantly reduce the time and cost required for the reconstruction process. The assistance will comprise the following stages:

- identification of needs in the construction sector;
 - elaboration of simple architectural design concepts involving the use of timber, possibly in combination with other types of materials;
 - selection of existing plants capable of shifting to the production of the materials needed; and
 - pilot production of the components defined and construction of a few demonstration buildings (homes, schools, clinics etc.) to promote the further use of the structural systems.
- Rehabilitation (or, if not available, fostering) of the manufacturing capacity within existing enterprises for medical equipment, health supplies, educational materials including educational toys and school supplies. Following an initial needs-assessment, the assistance could include:
- definition with the assistance of health sector specialists and educational psychologists of types of items most urgently required;
 - identification of enterprises with the capability to produce items required by the health and educational system;
 - support to selected existing manufacturing units in the start-up of production with a new design concept; and
 - advice to local authorities on measures appropriate to increasing the local production of health and educational supplies in the medium-term.
- Initiation of selected projects aimed at restoring a clean and healthy environment and preventing further environmental degradation. These projects will be selected and further defined on the basis of the impact assessment referred to above as well as in relevant cases financial viability considerations, particularly in respect of achieving maximum recycling of usable materials. The projects may, *inter alia*, include:
- processing and reusing building debris as concrete aggregate and road base materials;
 - treating municipal and industrial waste water including repair of the sewer systems;
 - processing urban waste with the main emphasis on recycling of glass, plastics, metal and paper;
 - decontaminating soil and rivers from chemical discharges;
 - recovering and recycling spent mineral oils;
 - providing on-site chlorine-generating units for drinking water; and
 - establishment of a water quality control laboratory; and
 - establishment of an air quality control laboratory.

C. PHASE III: TRANSITIONAL ASSISTANCE TO THE INDUSTRIAL SECTOR

The objective of the UNIDO intervention (and any UNIDO-inter-agency programme) should be to prepare the conditions necessary to receive private assistance on a commercial basis and public funding, particularly from major donors and international banks, as a basis for long-term sustained development.

In order to facilitate this, it is extremely important to set up the necessary institutional infrastructure as soon as possible in order to have it in place when it will be needed by the industry itself. This institution building process will, *inter alia*, comprise:

- Establishment of a Centre for Industrial Reconstruction and Recovery to coordinate international investment and international assistance, with a unit specialized on investment project preparation and appraisal.

- Creation of a computerized project monitoring and control system. This system would facilitate the work of local authorities in terms of:
 - coordinating the project activities of UN and non-UN organizations;
 - maximizing the project inputs from local resources, material as well as human;
 - ensuring the systematic follow-up of project proposals;
 - increasing the efficiency and quality of project implementation; and
 - creating a readily accessible institutional memory based on experience gained and data collected.

- Establishment of a Local Development Agency which, ultimately, will belong to the private sector, linked for instance to a Chamber of Commerce and Industry or a comparable institution. This Agency should act as facilitator for private entrepreneurs intending to start their own business and should have the capacity to:
 - receive requests and investment proposals from local companies;
 - analyze these requests in terms of priority, technical and financial viability, environmental sustainability and donor or joint venture partner criteria;
 - provide assistance in improving and finalizing such requests;
 - establish and facilitate contacts with international organizations, technology holders and financial institutions;
 - support start-up activities; and
 - provide training programmes in all aspects of enterprise management.

With the above institutional support structure in place - or at least under creation - UNIDO, working where appropriate with the other UN agencies, will be able to provide very cost effective assistance to the whole industrial revitalization process. This will base itself to a large extent on national staff which, in the process, will gain valuable experience in the required non-technical disciplines and mechanisms as well as in specific technological sub-sectors. As such, it could be the core of the UNIDO-inter-agency programme.