



**TOGETHER**  
*for a sustainable future*

## OCCASION

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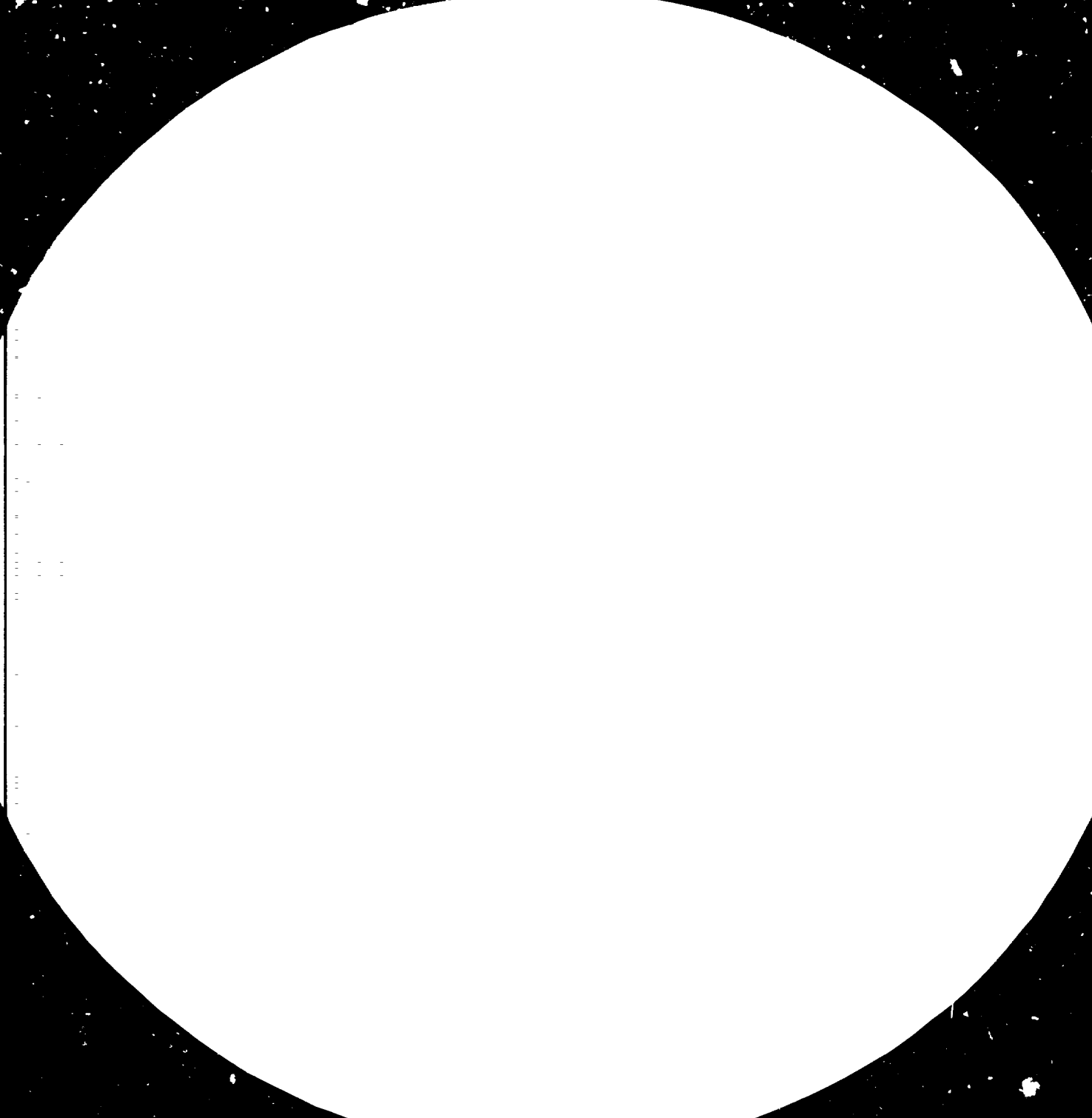
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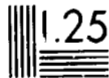
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100% Contrast, 100% Modulation Transfer Function, 100% Resolution

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## *Preface*

Since 1967, the United Nations Industrial Development Organization (UNIDO) has adhered to its mandate "to promote and accelerate the industrialization of the developing countries" by responding to requests for technical co-operation in all aspects of industry from the Governments of those countries.

This commitment to industrialization as a means of improving the living standards of nearly three quarters of the world's population, which was first outlined in November 1966 by the United Nations General Assembly in its resolution 2152 (XXI), has since been intensified. The Lima Declaration and Plan of Action on Industrial Development and Co-operation, which was adopted by the Second General Conference of UNIDO in 1975, called for an international effort to increase the developing countries' share of world industrial production to 25 per cent by the year 2000. This goal was further emphasized at the Third General Conference of UNIDO, held at New Delhi, India, in early 1980, with the adoption of the New Delhi Declaration and Plan of Action on Industrialization of Developing Countries and International Co-operation for their Industrial Development.

In the series of booklets *UNIDO for Industrialization*, of which this is one, an attempt is made to describe briefly the contribution of UNIDO, through its Division of Industrial Operations, to the industrialization of the developing world and to give examples of what has been done and will continue to be done to accelerate the process.

## FINANCING UNIDO ACTIVITIES

The bulk of the costs of UNIDO administration and research, now approaching \$US 48 million annually, is met from the **regular budget** of the United Nations, as are some lesser expenditures reserved for certain advisory and training activities. Once UNIDO achieves the status of a specialized agency within the United Nations family, it will cease to be funded from central sources of the United Nations and will rely on its own budget based upon contributions from its member States.

Technical assistance programmes for projects in developing countries, however, are funded from varied sources, the most important of which are summarized below.

By far the largest share of the field activities of UNIDO, some 70 per cent of the total, is funded from the **United Nations Development Programme (UNDP)**. Thus, a high proportion of UNIDO field projects are subject to UNDP approval before implementation. Since the ultimate source of this money is the contributions of the member States themselves, both developed and developing, it can truly be said that UNIDO field activities are *self-help programmes*, initiated only at the request of Governments of developing countries and using funds to which many developing countries themselves contribute. These funds are allocated to particular countries from UNDP sources up to a predetermined amount known as the indicative planning figure (IPF). They cover the whole spectrum of United Nations assistance to those countries, industrialization being only one of many programmes needing financial support.

Country programmes normally have a five-year span; and the available funds, which vary from country to country and are weighted in favour of least developed countries, must be allocated to specific projects within a country during the five-year period.

**Special Industrial Services (SIS)** funds are confined to a narrow range of expert services provided for unexpected high-priority projects that are called for from time to time. The programme is restricted to short-term projects of limited cost, and during recent years \$US 3.5 million has been set aside annually to support it.

The **United Nations Industrial Development Fund (UNIDF)** was created to finance innovative projects, preferably projects having a multiplier effect. The Fund consists of contributions pledged by individual Governments, and in some cases the purpose of the contribution is specified. Pledges are made in convertible and non-convertible currencies.

**Trust funds** are provided by participating Governments for specific projects to be executed by UNIDO in accordance with agreements reached with the contributing countries. They are used, typically, for technical assistance, expert services and specialist training.

The small **regular programme of technical assistance** provides funds for types of technical assistance that either complement other programmes or do not lend themselves conveniently to alternative means of financing. In particular, this type of funding permits a certain degree of flexibility in spending, since the allocation of the funds available is entirely under the control of the principal policy-making organ of UNIDO, the Industrial Development Board. Programmes are designed to reflect the emphasis on special measures for the least developed countries, on technical co-operation among developing countries and on establishing and strengthening industrial training facilities in developing countries.

## **Shipbuilding and ship repair development**

For some years, developing countries have been showing an increasing interest in the development of maritime and inland water transport, which is naturally linked to basic transport engineering industries such as shipbuilding, ship repair and marine engineering.

Shipbuilding and repair are of major importance to many developing countries, especially to their shipping and fishery industries but also to the economy as a whole, since they affect a country's trade, communications and food supply. Being labour-intensive, they contribute to a reduction in unemployment, and they give an opportunity to local workers to improve their skills.

Developing countries wish to build up national fleets for a variety of reasons, reflecting perhaps their economic, political and social diversity. Common characteristics of all these countries, however, are low income and possession of small merchant and river fleets. Basically, they all wish to stem their foreign exchange outflow and ensure that they themselves benefit from any traffic that they generate.

Island developing countries, of course, have particular problems in this field. Disadvantaged by their distance from other economic centres, ports and shipyards, some islands may face the risk of being left behind in the development process. By their nature, they greatly depend on sea traffic and inter-island shipping services, which are sometimes irregular, often infrequent and usually costly. Their fleets are usually too small, and their shipbuilding (or boatbuilding) and repair facilities are inadequate or obsolete or do not exist at all.

Since co-operation among island countries themselves is still at an early stage, co-ordinated measures to develop international waterways, rivers and inland lakes for transport purposes are lacking. But the demand for better water transport systems, with maintenance and repair facilities, is there.

### **TRENDS AND DEVELOPMENTS**

In the years to come, shipbuilding will be increasingly influenced by the struggle for a more evenly balanced distribution of shipping between developed and developing countries. There is thus an urgent need for consultations between the traditional and new shipbuilding countries in order to harmonize national interests. There are now indications of a rapid shift in the shipbuilding industry to developing countries, some of which may provide good locations for the expansion of marine fleets.

In 1977, some 23 developing countries were engaged in shipbuilding activities, accounting for 5 per cent of the world total. In the same year,

developing countries accounted for 7.9 per cent of total world sea-going tonnage; by mid-1979, the share stood at 9.4 per cent. Since then, developing countries have continued to increase their share of tonnage for all types of vessels, with a parallel expansion of their shipbuilding industries. However, despite the progress made by the few advanced shipbuilding countries among them, the capacity of developing countries as a group remains inadequate to meet their needs.

In the shipbuilding world there is now a switch towards smaller tonnage and more specialized ships; the chances of survival of medium-sized yards are improving; and there is a trend away from turbine engines to diesel engines. All these aspects and trends must be taken into account in drawing up shipbuilding policy and adapting it to the interests of developing countries, although, obviously, the interests of developing countries cannot be entirely divorced from those of the rest of the world.

Each maritime developing country needs a maritime transport engineering sector, including shipbuilding (or boatbuilding) and repair, whose activities must take economic and political considerations into account.

## **BACKGROUND OF UNIDO ASSISTANCE**

The commitment to assist developing countries in the field of shipbuilding and repair must be seen in the light of the original mandate of UNIDO to promote the industrialization of developing countries, with the importance of engineering activities to industrialization recognized from the start.

The Second General Conference of UNIDO, held at Lima, Peru, in 1975, specifically called for the "creation of national, regional and inter-regional enterprises in the field of maritime transport...".<sup>1</sup> The Third General Conference of UNIDO, held at New Delhi in 1980, envisaged special measures for the least developed countries and island developing countries, including building up their infrastructure, with attention given – among other things – to their transportation sectors.

Since its inception, therefore, UNIDO has steadily increased its technical assistance activities in shipbuilding and repair. They comprise:

- Provision of advice to Governments on development programmes for their shipbuilding industries
- Provision of technical and managerial advice to the shipbuilding industry, including advice on modern methods of production
- Assistance in establishing repair facilities
- Assistance in establishing industrial institutions and development of technology, including new technologies in ship and boat production
- Carrying out techno-economic studies or technical evaluations of existing maritime facilities
- Provision of training for personnel in the shipbuilding industry

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<sup>1</sup> See *Report of the Second General Conference of the United Nations Industrial Development Organization (ID/C'ONF.3/31)*, chap. IV, para. 60 (m).



To sum up, the technical assistance programme of UNIDO for shipbuilding and repair industries is a broad one. In carrying it out, UNIDO co-operates as necessary with other United Nations bodies.

UNIDO issues publications and reports on specific subjects of interest in this field that can be obtained upon request.

## **SELECTED AREAS OF UNIDO TECHNICAL ASSISTANCE PROGRAMME**

### **Policy formulation, marketing analysis, preparation of techno-economic evaluation studies and reports**

Upon request, UNIDO assists Governments in preparing a range of evaluation studies, including studies on the present state of the facilities, market estimates, financial studies and recommendations for further action. For larger tasks, such evaluation studies may be carried out through subcontracting. UNIDO teams of experts discuss the major findings and recommendations of their studies and reports with Governments and with the United Nations Development Programme (UNDP), which provides financing.

In Turkey, UNIDO assisted in evaluating a project for a new shipyard. Other feasibility studies carried out by UNIDO include "Study for the integration of the shipbuilding and shiprepair industry" for the Andean group of countries (Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela) and "Feasibility of establishing a shiprepairing and shipbuilding facility in Cyprus".

### **Expert group meetings and workshops**

Another type of assistance, and an important one, can be supplied through workshops and meetings. For example, a Workshop on Shipbuilding, Ship Repair and Design for Mediterranean Countries, organized by UNIDO in co-operation with the Government of Malta in 1979, brought together participants, research and development institutes and maritime consulting firms from both developed and developing countries. It made useful proposals concerning co-operation among the participating countries in collecting and distributing information, in organizing training and in marketing and design. It created interest in holding similar meetings for other regions.

Some meetings may be organized specifically in a country with considerable experience in a particular subject, in order to speed up the acquisition of the available knowledge and experience and to promote co-operation among the developing countries. The experience of some bigger developing countries may be of interest to smaller countries seeking to update their boatbuilding capabilities and introduce new methods of production.

### **Boatbuilding and boat maintenance facilities**

Boatbuilding is a necessity for some island and less developed maritime countries. Major rivers, sometimes common to several countries, and inland lakes offer potential for boatbuilding and the development of maintenance and repair facilities. At present, local companies are invariably small and often work at a family level; drawings are frequently not used during construction, and designs are based on boats previously built; construction is done with simple tools, using traditional methods; maintenance, if any, is usually inadequate. Here, UNIDO can assist in many ways, by strengthening a country's boatbuilding and maintenance capacity to meet growing needs for vessels engaged in transport, fishing or tourism; by helping to reduce dependence on foreign market resources; and by strengthening public-sector industries. For example, UNIDO assisted in establishing a boatbuilding and maintenance complex in the Seychelles.

### **Small-scale ship repair workshops**

In developing countries there is an urgent need to introduce regular preventive maintenance and repair for a large variety of ships and boats – short-range fishing boats, patrol boats, off-shore supply craft, coasters, tugs, barges etc. The repair of inland water transport equipment is a special problem, since inland water vessels are often very old and not designed for



*Building of ferro-cement boats*

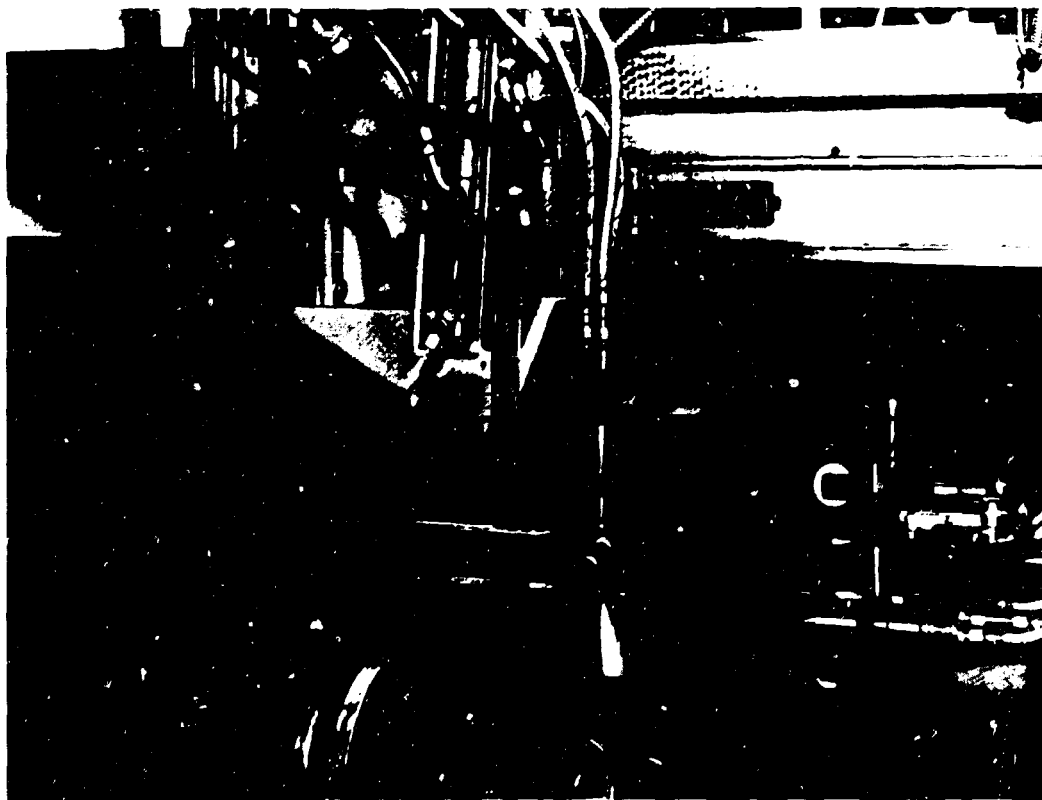
their specific tasks; hull maintenance is not carried out regularly, and preventive maintenance for diesel engines is virtually non-existent.

Such repair activities are becoming increasingly important, not only because of the income and employment they generate, but also because of the opportunities they create for acquiring skills. In addition, small-scale ship repair workshops may promote the establishment of a maintenance and repair network in the country concerned, and subsequently introduce modern methods of management. Beyond that, neighbouring Governments may decide that it is practicable to establish a common workshop. In any case, repair workshops can serve as a nucleus for the further development of the ship repair industry.

The Government of the Syrian Arab Republic has requested assistance for the ship repair industry.

### **Rehabilitation of existing facilities**

Sometimes shipbuilding and repair facilities may already exist but are in urgent need of rehabilitation, possibly as the result of wars or natural disasters, lack of funds or lack of qualified personnel. UNIDO can also assist here by providing advice and expertise in rehabilitation, training personnel and supplying specialized equipment. In Fiji, UNIDO assisted in improving the government shipyard. In Yugoslavia, it assisted in rebuilding a shipyard devastated by an earthquake.



*Gas cutting machine*

### **Development of ship design and scientific and research institutes**

Developing countries in which a shipbuilding industry already exists need assistance in establishing ship design and research institutes and in equipping them with model testing facilities and laboratories for working on such problems facing the industry as material testing, quality control, welding technology and corrosion.

Possible UNIDO assistance includes long- and short-term consultancy to establish the organizational and managerial structure of institutes and interrelated laboratories and to strengthen their scientific and research basis through training, expertise and supply of equipment.

### **Promotion of regional maritime transport engineering centres**

UNIDO supports the idea of establishing maritime transport engineering centres that provide services to countries in a given region. Such a centre may serve as a model and source of training and expertise in quality control, welding and maintenance for the developing countries it serves. It is hoped to establish such a centre for Mediterranean countries.

### **Application of new technology**

#### *Computer-aided design and manufacture*

UNIDO can assist developing countries with some experience in shipbuilding in introducing a computer-aided design and production system, which covers the complete sequence from basic design to numerical data for producing and prefabricating hulls.

#### *Offshore industry*

With the growing interest of some developing countries in setting up offshore drilling units and other floating means of reaching gas, oil and other deposits in the sea, UNIDO can assist in providing relevant expertise through subcontracting with well-known firms.

### **Assistance to maritime works and auxiliary industries**

In addition to assisting the shipbuilding industry proper, UNIDO also assists maritime works and auxiliary industries. It makes techno-economic analyses, provides direct support in establishing maritime engineering workshops and assists in modernizing mechanical workshops and stationary power installations in port areas. It also gives advice on the

production of containers and production of maritime environment protection equipment.

One example of UNIDO assistance in developing port areas comes from Trinidad and Tobago. Here UNIDO provided assistance to a project to improve the harbour at Port of Spain by removing sunken wrecks that were a danger to shipping.

*For further information on UNIDO activities in the field of shipbuilding and ship repair development, contact:*

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UNIDO  
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P.O. Box 300  
A-1400 Vienna, Austria



*Other booklets in this series*

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