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18147

UNIDO

REGIONAL CO-OPERATION PROGRAMME FOR THE  
INDUSTRIAL RECOVERY OF LATIN AMERICA AND THE CARIBBEAN

MISSION REPORT

(December 1989 - March 1990)

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Boadisy eff: 15. August  
PID/ALBA/LAC

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(1) Scope of the Mission

1. The main purpose of the mission was to ascertain whether the special UNIDO programme, and in particular the four projects identified by GRULAC/Vienna at its 23/8/89 meeting, corresponded to a real demand, whether other programme themes ought to be explored, and whether national and UNDP resources were likely to be available by way of cost-sharing or co-financing. (1)

2. The first-part of the mission included Mexico, Brazil (Brasilia, Sao Paulo and Rio de Janeiro) and Uruguay. The second part of the mission added consultations at UNIDO and UNDP headquarters, and a visit to Cuba. While the four countries visited do not constitute a fully representative sample, Mexico and Brazil (2)

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(\*) This report is presented with two annexes: Annex A, places visited and persons consulted; Annex B: excerpt from the recent mid-term review of the UNDP regional programme for Latin America and the Caribbean, related to the modernization of the productive sector. The documentation gathered during the mission is being transmitted to the UNIDO secretariat.

(1) Biotechnology; subcontracting; automation in capital goods industry; agro-industries; The Central American investment promotion project, on the other hand, was not included in the terms of reference.

(2) Document GC.3/28, subsequently endorsed by the UNIDO GC.

(3) The visit to Brasil took place on the eve of an important presidential election. It was thus difficult to explore forward perspectives with national authorities. The most fruitful talks were with UNDP and UNIDO field staff and the private sector.

are typical for the more advanced, newly industrialized countries of the region; Uruguay represents the smaller countries whose economies are predominantly agrarian but might -- given favourable factors such as a high <sup>educational level</sup> ~~literacy rate~~ and a relatively sound infrastructure -- expand into the industrial sector in such areas as agro-processing, services, parts and semi-manufactures via subcontracting or co-production schemes. As regards Cuba, its remarkable achievements in areas such as biotechnology and genetic engineering, as well as in the sugar cane industry, demonstrate that given the requisite political will, and with purposeful, realistic planning, even a small country can successfully enter areas of new and sophisticated industrial technology of interest to the region as a whole.

3. A list of persons and institutions consulted is enclosed as Annex A. Conversations with the UN Resident Coordinators/UNDP Resident Representatives, and with the UNIDO Field Directors in Mexico and Brasilia (Contreras and Skupch) were particularly useful. On the other hand, it was not possible to meet the experts working on the formulation of final projects documents -- with the exception of the external consultants retained for the biotechnology project (Sorj and Quintero) and, very briefly, the external consultant concerned with the agro-industries project.

## (2) General Issues

### (a) Demand for Technical Cooperation

4. While few of the persons consulted in Government and entrepreneurial circles seemed aware of the proposed UNIDO/LAC programme, all welcomed the new initiative: special efforts were urgently needed to re-vitalize the processing, manufacturing and services industry in Latin America and the Caribbean. It should be noted that this was also one of the main conclusions of the Mid-Term Review of the UNDP Regional Programme for Latin America and the Caribbean in which the consultant took part in the last quarter of 1989. Modernization of the productive sector, including its scientific/technological underpinning, enterprise management and the development of internal and external markets was among the critical policy issues identified both at political level and by opinion leaders in a significant sample of countries in the region and its sub-regions. Without such a determined effort to overcome the obsolescence and serious under-capitalization of the industrial/technological infrastructure, and to regain or develop new markets within and outside the region, it would be difficult for Latin America and the Caribbean to reaffirm its position in the global economy, to resolve the external debt problem and to attain acceptable levels of employment and income. This has obvious political implications: in ultimate analysis, what may be at stake is also the viability of the democratic, participatory forms of Government that have emerged in the area. (The relevant chapter of the UNDP/RPLAC Mid-term Review is enclosed as Annex B)

(b) Comments on the Approach of the UNIDO/LAC Programme

5. There was general agreement that regional technical cooperation had a specific role to play in the industrial recovery of Latin America and the Caribbean, side-by-side with country-focused technical assistance and investment. It was also noted, however, that the main function of regional technical cooperation was that of a catalyst, and that it should not be seen a substitute for national action or investment. As such, the new UNIDO/LAC programme was expected to stimulate innovation, to improve evaluation and monitoring, and to serve as a vector for the transfer and internalization of successful experience from within or outside the region, in areas ranging from technology to management, market- and product development, as well as in the generation of employment and incomes.

6. It was also pointed out that, to be effective and not operate in a vacuum, the new programme would have to relate to, and build upon efforts at country level, including multilateral and bilateral technical assistance and investment. With regard to the latter, it was noted that in many instances UNIDO support would be needed at the pre-investment stage, where targeted, high-quality technical assistance could help to mobilize internal and external financing, including, in particular, that of multilateral lending agencies such as the World Bank and IDB.

7. It was recognized, in fact, that technical cooperation resources were generally not, by themselves, sufficient to provide more than an initial stimulus, demonstrate the feasibility of a

particular approach, facilitate exchanges and dissemination of knowledge, or help in the creation of institutions expected to become self-supporting once they were in operation. Even full-fledged industrial feasibility studies generally transcended the role of, and the level of resources available for technical assistance such as that envisaged under the new UNIDO/LAC programme. Nor should that programme be expected to provide long-term budgetary support to the institutions it might help to create.

8. Beyond this realistic assessment of the functions and scope of the UNIDO/LAC programme, several basic points were made with regard to the methodological approach of the proposed projects, and deserve comment at this stage. One concerns the problematic of institution-building, institutional fragmentation and institutional dependencies. A second issue concerns the regional impact (or lack of it) of pilot- or demonstration projects. The third relates to the need for a programme- or thematic rather than project-by-project approach in planning regional cooperation.

#### Institution-building

9. There was marked skepticism among the persons consulted with regard to the creation of new regional institutions. This is consistent with the findings of the mid-term review of the UNDP regional programme (Annex B) calling attention to the problem of institutional fragmentation and duplication, and to the growing alarm over the fact that the resources of many regional institutions are insufficient to permit significant operation without continued external support. This does not, of course, exclude the creation of new regional institutions in appropriate cases. It is evident,

however, that both the countries of the region and the donor community expect that regional action should whenever possible build upon existing -- and often under-utilized -- institutional capacity at regional as well as at national level, whether by networking or by other collaborative arrangements. Where there is no alternative but to create new regional institutions, they should be financially viable over time, i.e. not depend on continued external support.

10. In this perspective, it was suggested that -- quite apart from its lack of a specific focus -- the agro-industries project should be reconsidered; as it stood, it involved the establishment of a model manufacturing plant, the creation of a regional centre for applied instrumentation, a regional centre in the area of standardization and quality control, the upgrading of a food research centre for a wide variety of products, and the establishment of a regional industrial micro-organism collection requiring not only high initial investments, but also substantial recurrent costs for the continued operation of the various centres, and for the maintenance of the tissue culture collection. By contrast, the automation and the subcontracting projects propose to utilize existing national institutions in relatively informal collaborative or networking arrangements.

#### Pilot- and Model Plants

11. Some doubts were also expressed about the effectiveness of pilot or model plants in the context of a region as complex and diverse as Latin America and the Caribbean. It can in fact not be assumed that a pilot plant established in a Southern Cone

country, for instance, would have much of an impact in Central America, or in the Caribbean. To have a real demonstration effect, pilot ventures presupposed sustained dissemination efforts in terms of real time communication, joint management, fellowships and study tours, and adjustment or assimilation of the pilot experience in widely different settings; quite apart from the budget implications, it was felt that multilateral technical assistance had rarely been able to assure such effective dissemination over time. It was thus suggested that instead of concentrating scarce resources on full subsidies for single pilot- or model plants, the UNIDO/LAC programme might instead spread its support over groups or consortia of existing enterprises prepared to join forces in modernizing and upgrading their operation in a particular sector, area or technology. This appears, in fact to be the approach suggested in the subcontracting project, as it was in the UNDP/UNIDO biotechnology project which the new UNIDO/LAC programme is expected to supplement and follow up.

#### Programme vs. project approach

12. Some concern was expressed over the fact that the new UNIDO/LAC programme was presented in the form of five pre-selected projects -- some of them obviously drawn from the UNIDO headquarters pipeline -- without full consultation with national technical assistance coordinating authorities, and especially the industrial circles concerned. While it is difficult to know whether whether or not sectoral authorities and industrial circles in the various countries had been consulted when GRULA/Vienna approved the projects -- the fact that the UNIDO Country Directors (SIDFAS)

were not involved leads one to assume that they were not --, it may be hoped that the UNIDO staff, and the consultants entrusted with the formulation of the pre-selected projects -- will in future establish contact with the competent national authorities (technical assistance coordinators and sectoral ministries) and industrial circles, with the full involvement of the UNIDO Country Directors. As far as could be ascertained, this had not yet been done, at least in the countries visited in the course of the present mission.

13. Assuming that the UNIDO/LAC programme will continue grow in coming years, it would be desirable in future to adopt a more open, flexible approach. In that perspective, the present five projects should not be seen as a closed list. For the future, projects should be identified and formulated on the basis of systematic programme- and thematic prospection exercises conducted with the full participation of national authorities, the scientific and technological community and, most importantly, the industrial circles of the countries concerned. Pipeline projects -- even if rejected by other sources of funding -- and proposals of headquarters staff may, of course, also be valid, but their relevance should be checked out in the reality of the field, and confirmed in such a broad programmatic perspective rather than by individual, project-by-project salesmanship. To some extent, this appears to have been the purpose of the GRULA/Vienna discussion of the present programme. Quite apart from the fact that not all countries of the region are represented in GRULA/Vienna meetings, however, most of the persons consulted in the course of the present mission felt strongly -- as noted earlier -- that competent national authorities and industrial

circles should be given a more active part in thematic prospections before being confronted with particular project proposals. Again, this position is consistent with the views recorded in the mid-term review of the UNDP regional programme for Latin America and the Caribbean.

14. A first opportunity to identify priority themes and discuss prospective themes relevant to the industrial development of the region and its sub-regions might be the UNIDO/ECLAC/SELA meeting scheduled for this year, as well as the negotiation of future UNIDO/UNDP programme inter-linkages (para.18-21 below). Beyond this, it might be possible to conduct prospection exercises on particular themes -- perhaps jointly with UNDP, SELA, ECLAC and sectoral regional bodies. Chapter 4 below discusses some of the themes mentioned in the course of the mission.

15. Particular mention should be made at this point of the role of UNIDO country directors in future programme- and project development -- an issue raised in all the countries visited. In fact, neither of the two field directors consulted had been fully briefed on the new UNIDO/LAC programme, nor had they been informed about the visits of project-formulation consultants in the countries they covered. It is important that this situation be corrected in future. Quite apart from the fact that the failure to inform and involve them on a matter of such policy importance as the new UNIDO/LAC programme undermines their position in the field, it should be kept in mind that the country directors are the natural channels of communication with national authorities -- including technical assistance coordinators, sectoral ministries, the research establishment and, most importantly, industrial

circles with which it would be impossible to maintain a live dialogue out of Vienna. As such, they are essential adjuncts not only of UNIDO headquarters, but also for the decision-making and supervisory functions of GRULA/Vienna and its individual missions.

(c) Additional Funding

16. It is expected that the UNIDO/LAC programme will be strengthened by inputs from sources other than the Industrial Development Fund, by way either of co-funding or of cost-sharing. The co-funding modality generally implies two separate budgets relating to the same overall project objective. Cost-sharing, on the other hand, means a single budget encompassing not only the UNIDO contribution, but also contributions from other sources. While coherent management is facilitated by the latter modality (one budget/one management), co-funding can also be a viable formula as long as the separate projects make explicit reference not only to a common objective, but also to joint or coordinated management.

17. In the perspective of the UNIDO/LAC programme, three potential sources of additional funding are particularly important: UNDP, national cost-sharing, and cost-sharing or co-financing from bilateral technical assistance programmes.

UNDP

18. As already noted, the modernization of the productive sector is one of the priority objectives of UNDP programme action in Latin America and the Caribbean, both in the perspective of its regional programme (see Annex B) and in most UNDP

country programmes. It may consequently be assumed that UNDP- and UNIDO/IDF- funded technical cooperation activities can -- and should -- be complementary. In principle, this view is shared by UNDP Headquarters and by the UNDP field offices visited. It will be necessary, however, to negotiate with UNDP when the actual projects are formulated, as well as in future thematic prospection exercises which, as noted above, could be undertaken jointly in preparation of the Fifth UNDP Programming Cycle (1992-96), as well as in the context of an expanded UNIDO/LAC programme.

19. As regards the modalities of such complementary UNDP and UNIDO programme action, both approaches are possible, from the perspective of UNDP: co-funding, i.e. parallel UNDP and UNIDO projects relating to the same objective, and generally involving the same counterparts, or cost-sharing. The latter modality, particularly appropriate where UNIDO is the executing agency for a UNDP-funded regional project, would normally mean that the UNIDO contribution appeared as third-party cost-sharing in the UNDP project; there seems to be no reason, however, why the positions could not be inverted, with UNDP funds being treated as cost-sharing in a UNIDO/IDF project. In either case, the matter will have to be negotiated on a project-by-project basis, keeping in mind that the UNDP involvement could come either via their regional programme (the normal case), or from one or more of the UNDP country programmes (e.g. for specific national action in the context of an UNIDO/IDF regional project).

20. Of the four projects on which the present mission has focused, particular interest was shown by UNDP field offices and

headquarters in the biotechnology and subcontracting projects, especially since the former is expected to be complementary to the current UNDP/UNIDO and UNDP/UNESCO regional projects. There might also be interest in the automation project, both with regard to capital goods and other sectors, perhaps in combination with the subcontracting project (to the extent that the latter would involve co-production schemes). As regards agro-industries, there is general agreement -- both in the field and at headquarters -- that the sector is of critical importance for the region; the reaction to the present project proposal, however, was generally negative, in line with the other views elicited during the mission, and for the reasons discussed in para.47-51 below: lack of focus, excessive reliance on new regional institutions, unrealistic budgets.

21. In fact, some basic points should be kept in mind in negotiating with UNDP on complementary action. One is that the present UNDP programming cycle comes to an end in 1991, and that there are relatively few uncommitted resources for the 90/91 biennium. The second point is that UNDP programmes are initiated by, and negotiated with the central technical assistance coordinating agencies in each country; at the programming stage this rule, prescribed by the Consensus, is applied more loosely in the UNDP regional programme. However, any regional project must, in principle, be approved by at least three countries, and the participation of any country must be cleared by its coordinating authority. Thirdly, UNDP has become increasingly concerned with the problem of institutional fragmentation and dependencies, and with the high cost of institutional support in the context of its regional programme; the discussion in paragraphs 8 to 11 above is in point. It is therefore most un-

likely that UNDP would be prepared to join the agro-industries project, as presently structured. Lastly, and judging by the views recorded in the mid-term review of the UNDP regional programme, the emphasis in industrial and technological policy has shifted from a central planning model, with centrally managed support institutions, to a more pragmatic approach focusing at enterprise level; in that context, technological projections and forecasting retain an important place, as do linkages between research bodies and productive enterprises. Both presuppose a realistic assessment of the country's or enterprise's potential competitiveness -- i.e. their comparative advantages in terms of human resources (including management and intermediate technical manpower), financial resources, markets and market access, etc.

#### National cost-sharing

22. No very clear signals were received on this in the countries visited. Traditionally (at least in UNDP experience) it has been more difficult to obtain cost-sharing commitments for regional than for national projects (for which cost-sharing has reached impressive levels in Latin American UNDP country programmes -- in some instances well over 100 percent). It is nevertheless suggested that the possibility of national cost-sharing be purposefully explored when the actual projects are formulated: the chances should be particularly great in the country where the project is based; also, it is always easier to obtain commitments in the form of counterpart contributions, normally in kind, and which are not part of the project budget, than in the form of cost-sharing. The same goes for inputs from other, non-governmental sources -- industry federations, associa-

tions, etc. -- who have often contributed to projects in the industrial sector (e.g. the capital goods and non-destructive testing projects). As regards cost-sharing, problems may arise if it is offered in local, non-convertible currency.

#### Other additional sources of funding

23. There may be other sources of co-funding or third-party cost-sharing. Where it comes from individual donor countries -- Spain, Italy, Japan and Canada have particularly active bilateral programmes in Latin America and the Caribbean -- it would be preferable that cost-sharing be channeled through the Industrial Development Fund. On the other hand, co-funding with bilateral programmes is also a possibility. In either case, however, it will be necessary to negotiate on a project-by-project basis.

24. Another potential source of co-financing (cost-sharing schemes would appear less likely) is the IDB. Unlike the World Bank, it has some non-reimbursable technical assistance funds, and can also make regional loans or grants. A special approach to them would be advisable and, if this has not been done yet, the IDB should be invited to the UNIDO/ECLAC/SELA meeting on industry, and be asked to participate in any future thematic projection exercises. To my knowledge, it is quite receptive to proposals in the industrial sector.

#### (3) The Projects

25. It was not easy, in the course of the mission, to elicit very concrete views on projects which (with the exception of the project document on subcontracting) were not fully articulated.

Further consultations at country level and with UNDP will thus be needed, hopefully with or through the UNIDO country directors, either (and preferably) while the projects are being elaborated by UNIDO staff and outside experts, or once the projects will have been finalized.

26. As already noted, it is generally felt that while the four project areas selected in Vienna have merit, they should not be seen as a closed list. Among other topics mentioned in the course of the mission were:

- new materials;
- micro-electronics, with particular reference to informatics and tele-communications;
- automation, also in industries other than capital goods;
- sugar-cane based industry, including sugar chemistry
- industrial pollution control;
- quality control
- negotiation of technology contracts.

These topics are discussed in greater detail in Chapter 4 below. No doubt others (including some suggested by UNIDO staff before the five initial project areas were selected) would be added in a comprehensive prospection of the needs and opportunities of the region.

(a) Biotechnology project

27. There appears to be keen interest in this project, especially in Mexico, Brazil and Cuba, as well as in UNDP. The assumption is that it would build upon the present UNDP/UNIDO and UNDP/UNESCO regional projects (RLA/83/003 and /009, respecti-

vely), as well as on UNDP country projects in Mexico, Brazil and Cuba. The regional UNDP projects are funded only through the end of the current UNDP programming cycle (1991). It is thus hoped that the new UNIDO project will on the one hand complement the ongoing UNDP projects, and on the other hand assure the follow-up after 91, with or without additional UNDP funding. [Note that continuing UNDP programme support in the area of biotechnology/genetic engineering is likely in the Fifth UNDP programming cycle].

28. In that perspective, it is expected that the UNIDO project will focus on the industrial application of biotechnology -- including, in countries such as Brazil, Cuba and Mexico, the products of advanced genetic engineering --, and extending not only to the production process, but also to the development of internal and external markets; this, in turn, encompasses comprehensive, real time information flows on new technologies and their industrial application, trials and testing, security <sup>(4)</sup> and quality control, licensing/technical assistance and marketing arrangements. It is in that area -- marketing -- that even Latin American countries with a sophisticated research establishment (e.g. Cuba, but also Brazil and Mexico) are still relatively weak.

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(4) The problem of security in terms of environmental impact has acquired considerable importance in an international context whenever new live organisms are created by genetic engineering.

29. It is thus not suggested that the project should, by itself, focus on basic research in biotechnology, and in particular not on genetic engineering. Instead, it should have a twofold objective: (i) in a few selected instances, assist research groups and industrial enterprises in the region to develop and market their own new products; and (ii) enable the research establishment and industry of the whole region to apply and adapt existing technologies, regardless of their origin, at the stage of industrial production.

30. While it may be possible to generate a fairly wide range of new products by traditional biotechnologies (seed- and crop improvement; fermentation), it is unlikely that many sophisticated new products involving genetic engineering will emerge from the region in the short- to medium term. In fact the development of sophisticated new products, especially in the medical/pharmaceutical field (e.g. immuno-biologicals), presupposes substantial investment, in the order of tens of millions of dollars -- if not for equipment, so for research, testing and control; only a few institutions in Mexico and Brazil, and in particular the Center of Genetic Engineering and Biotechnology in Cuba, appear at present to have that capacity; the Cuban Center, for instance, already produces various types of interferon (leukocyte, recombinant), a recombinant epidermal growth factor, antimeningococcal BC vaccine and monoclonal antibodies. Obviously, the development of such products would go much beyond the scope of, and the resources available for technical cooperation under the UNIDO project; the project might, however, make an important contribution in such areas as quality control in the

production line, security, market development and marketing, and perhaps in the negotiation of licenses and technology contracts.

31. On the other hand, much could be done by preparing the industry of the region -- including middle-size enterprises -- to acquire and adapt exiting technologies, and apply them at the production level for a wide variety of uses: crop and livestock improvement; aquaculture; nutrition; energy; mining, etc.. To this end, the UNIDO project could play key role by ensuring a flow of accurate and timely information, training both management and technicians (especially intermediate technicians), and assisting both in market development and marketing and in the negotiation of licensing and other contractual arrangements.

32. Beyond these general comments gathered in the course of the present mission, it will of course be necessary to await the final formulation of the project by the consultants retained for that purpose, including their views on the products or technologies on which the project should concentrate; in Brazil, Cuba and Mexico the interest encompasses both medical and agricultural applications, while in Uruguay major attention was given to the latter, especially as related to livestock (feed; improvement of the gentic base)

33. The original UNIDO project proposal was considered valid, but would have to be revised and tightened; it may not be necessary, for instance, to re-do an inventory of existing technologies: it is seen as more important to establish an operational information system, i.e. a comprehensive, current data base and channels of

communication reaching to enterprise level; it is not clear for what specific target groups the proposed training is intended for; and it may not be easy to select at the outset three "model cases" and "finance their development" (the comments in para.11 above are in point)..

34. More perhaps than for other projects, the choice of the country -- and institution -- in which the project is to be based will be of critical importance. There are few institutions in the region that can provide the appropriate technical and scientific backstopping, as well as the contacts necessary for a project in this area. As far as could be ascertained in the present mission, only the Center of Genetic Engineering and Biotechnology in Cuba, with its generous logistic facilities, operational experience and high scientific credibility not only in the region, but also in Europe and Asia, appears to be both capable and willing to serve as host for the project.

(5)

(b) Subcontracting project

35. The response to this project was positive not only in Mexico and Uruguay -- both listed in the project document as participating countries --, but also in Brazil and Cuba, whose participation did not seem to have been envisaged. It should be noted that in Uruguay the National Chamber of Industries, mentioned in the project proposal as the prospective counterpart ("exe-

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(5) The term "subcontracting" was not clearly understood in some of the countries visited, and it was necessary to explain that it referred to contracting arrangements involving co-production schemes, the manufacture of parts or the provision of services to the main contractor (principal manufacturer).

cuting agency") was not aware of the project when visited in the course of the mission, but expressed a keen interest as soon as the concept was explained to them.

36. In Brazil -- a country which, like Mexico, has considerable experience with subcontracting, especially in the industrialized areas (Sao Paulo, Minas Gerais, Rio de Janeiro) -- it was felt both by ABIMEC (the association of mechanical industries) and FIESP (the powerful industry federation of Sao Paulo), as well as by the UNIDO country director, the UNDP field office and the national coordinating body for technical assistance (ABC) that the project would be of particular value for small- and medium size enterprises, also -- or particularly -- in the less industrialized areas of the country (the South and Northeast). In Cuba, the Ministry of Mechanical Industries as well as the Foreign Trade Secretariat expressed the hope that their country could join the project; it would be important both internally, to ensure full utilization of the installed capacity, and externally, by co-production or other subcontractual arrangements with other countries.

37. In fact, it was generally felt that the project would be useful both in a national and international context, with the initial emphasis on the former. For smaller countries (e.g. Uruguay), however, the possibility of entering into sub-contracting arrangements with their larger neighbours (e.g. Argentina and Brazil), and perhaps also in broader regional or global context, appeared to be particularly attractive. For the same reason, the project might be of importance for subregional cooperation -- e.g. Argentina/Brazil; the Andean countries; the Caribbean,

and its greater integration in Latin America; Central America.

38. Beyond these general expressions of interest, no very specific comments were recorded with regard to the project as presently structured, except for a suggestion to include some assistance in the formulation and negotiation of subcontracting arrangements.

39. It may be expected that, in principle, joint action should be possible both with UNDP and the IDB. In both instances, the role of subcontracting in regional and sub-regional integration should be stressed. In that sense, the participation of ALADI presents some advantages. In any case, it is suggested that, before finalizing a project document, the matter be discussed with UNDP/RBLAC, and the IDB.

(c) Automation in the Capital Goods Industry

40. Interest in this project was particularly high in Mexico, Brazil and Cuba. In Uruguay, which does not have a significant capital goods industry, its prospects seemed more remote.

43. In fact, the project will have to face two basic realities: one, that advanced capital goods industries (e.g. in Brazil and Mexico) are already automated (CAD, CAM, CAT; robotization, informatics in management), generally with a high level of sophistication, and two, that capital goods industries do not play (and are not expected to play, in the foreseeable future) a major role in many of the smaller countries of the region except possibly in the manufacture of parts under co-production or other sub-contracting arrangements.

44. Some doubts were thus expressed about the focus of the project on capital goods industries: other sectors (electronic appliances; textiles, agro-industries) might be equally -- or more -- appropriate. There was agreement, however, that an initial focus on capital goods was justified if one considered also the manufacture of parts and components, and its growth potential in smaller countries such as Cuba and Uruguay. It is suggested that this be kept in mind when designing the actual project.

45. In that perspective, the automation and subcontracting projects could obviously play complementary roles, and might thus be interlinked in their design and implementation. It should also be kept in mind that, from the perspective of parts manufacturers, CAM and CAT (i.e. automated or robotized quality control and testing) tend to be more relevant than CAD, since design is usually supplied by the contractor or principal manufacturer under prevailing subcontracting arrangements, while rationalization, quality control and testing in the production line are in general the responsibility of the sub-contractor. <sup>(6)</sup>

(d) Agro-industries

46. Agro-industry (including non-food and by-products for internal and export markets) is seen as a major growth area not only in Uruguay and Cuba -- countries with a clear agricultural vocation --, but also in Brazil and Mexico, and in the

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(6) It was noted that in Cuba CAD had been introduced in some manufacturing industries (informatics; hospital equipment; steel), and that CAM (robots) were being developed and introduced. Most other small countries of the region have not, however, progressed to that stage.

collaborative efforts among existing enterprises and institutions, without excluding region-wide activities and exchanges of experience in appropriate cases.

48. As an example of a more focused activity which might be considered under the UNIDO/LAC programme would be to develop the processing and marketing of the products of tropical rain forest zones (Amazonia; Central America), e.g. fruit, fruit juices, medicinal plants, and perhaps also tropical hardwoods extracted without destroying the genetic diversity and fragile eco-systems of the heterogeneous tropical forest. It might be assumed that such an initiative, of particular relevance in the context of global environmental concerns, could gain support both in the donor community and on the part of sub-regional policy bodies such as the Amazonian Pact.

49. Another area in which support of the UNIDO/LAC programme was seen as desirable was industry related to sugar cane, including its by-products (bagasse, etc), and industrial feedstocks derived from sugar. These are subjects of great interest not only in the Caribbean and much of Central America, but also in Brazil. Important work in this area -- e.g. on the use of bagasse, and energy use/generation -- has been and is being undertaken by GEPLACEA, partly through a regional UNDP project originally executed by UNIDO. As in biotechnology -- in fact, improved fermentation processes by biotechnology play an important role in sugar-cane processing -- the UNIDO/LAC programme might build upon and broaden the scope of the current activities of GEPLACEA..

55. The policy relevance of this topic -- also on in the perspective of the donor community -- need not be underlined. It concerns all industrial sectors, among them some of particular importance to the region -- e.g. tanneries, meat processing, sugar-cane refineries, dairy products, sawmills, pulp-and-paper plants -- , as well as chemical, petro-chemical, iron & steel and other processing industries. There is evident scope for exchanges of experience and training activities on a regional or sub-regional basis. Since industrial pollution and the disposal of toxic waste will be important topics on the agenda of the Global Environment Conference scheduled to meet in Brazil in 1992, it should be possible to mobilize considerable policy support for concrete technical cooperation in this area. Also, a thematic prospection exercise might be convened as part of the preparations for the 1992 conference; both UNDP and IDB are supporting such preparations in a Latin American/Caribbean context.

#### Quality Control

56. This remains an essential component of any effort to upgrade the industrial sector throughout Latin America. UNIDO could build on a series of successful national projects, some carried out with UNDP support, and on national institutions strengthened in that connexion.

#### Technology and other Industrial Contract Formulation/Negotiation

57. This subject was mentioned in all countries visited, especially (but not exclusively) with reference to biotechnology and subcontracting. Several universities in the region (USP in São Paulo; UNAM in Mexico) are developing courses and materials

in that area. A UNIDO project could build on these ongoing efforts, contributing the experience of other parts of the world, developing materials and data-bases, and assisting in curriculum development and dissemination in law schools, business schools and professional courses or seminars.

(5) Conclusions

58. The views recorded in the course of the mission confirmed the importance and timeliness of the UNIDO/LAC programme even if it was seen as too Vienna-centric. It would be desirable, in future, to identify and formulate projects on the basis of programmatic and thematic prospecting exercises involving industrial circles and (as conduits to them) the UNIDO field directors. UNDP and regional institutions such as the IDB should also be involved in the early stages of programme development, in the expectation that they might join forces with the UNIDO/LAC initiative.

59. As regards the four projects or project concepts already selected by GRULA/Vienna for the new regional programme, they will require some more work at a technical level, in close consultation with the UNIDO field directors and, through them, with sectoral national authorities and industrial circles. Additional funding from other sources (including UNDP Fifth Programming Cycle) seems possible, but will have to be negotiated by UNIDO.



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the Enhancement of the Private Sector Involvement in Development) involves case studies and analysis which may assist governments in articulating strategies and modalities for that purpose. So might the various projects focusing on investment promotion (RLA/87/009, Investment Promotion in Central America, and RLA/87/021, Advisory Services and Training in Foreign Investment in the Caribbean).

60. Export promotion, and the related problems of quality control and trademark, patent and copyright protection constitute a third area of interest. The regional programme includes a project on Training in International Trade (83/026), as well as a Caribbean-specific Trade Information Service (RLA/79/053) and a project on Standardization and Quality Control in the Caribbean. The region-wide project on Intellectual Property has already been mentioned. Tourism development (RLA/87/039), transport (TRAINMAR, RLA/87/012) and intra-regional trade (ALADI, RLA/86/022) are also included in the regional programme. It is generally felt, however, that further region-wide attention might have to be given to important export-related areas such as quality control, packaging and market development.

61. As noted earlier, it would be desirable to explore opportunities of joint action with UNIDO, whose General Conference has recently adopted a special programme for the industrial recovery of the region (para 41 above). Favourable comments were in fact received on the regional UNDP/ECLAC/UNIDO project on Capital Goods (RLA/\_\_\_/\_\_\_) initiated in 1978 and completed in the present cycle. The project has been instrumental in the creation of a regional association of capital goods industries, ALABIC, which is now

prepared to contribute support (primarily experts) to a new project, with a broader scope and participation, and a clear ECDC/TCDC dimension. It has thus been suggested that UNDP consider a preparatory assistance project to prepare the ground for this new and definitive regional effort.

ANNEX A

Persons Consulted

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Nestor Cosentino, President, Camara de Industrias do Uruguay

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**ANNEX B**

**[Excerpt, Draft Report of Mid-Term Review of the  
UNDP Regional Programme for Latin America and the Caribbean,  
Ambassador Bernardo Sepulveda Amor and Peider K nz  
December 1989]**