consultancy contracts are favoured in order to ensure that there is an independent Zambian control of companies.

Case Study 2: Technical Aid Agreement between Cooper Zambia Limited and the Welcome Foundation: Commentary and Appraisal of the Agreement

The agreement pertains to the transfer of technology through the supply of know-how. This agreement however has many loopholes and shortcomings, in that

(a) the agreement is very general and does not mention in specific terms its aims and objective.

(b) the agreement has no time limit, it is perennial. Cooper Zambia Limited is under an obligation ad infinitum to The Welcome Foundation Limited for

(i) payment of a fee calculated at one per cent of Cooper Zambia Limited's annual turnover

(ii) technical know-how and

(iii) no research and development can be carried on by Cooper Zambia Limited, and consequently there is no possibility that a re-orientation or adaptation of the technology can take place, to suit the local conditions.

(c) The transferee company (Cooper Zambia Limited) is wholly owned subsidiary of the transferor company (The Welcome Foundation Limited). Consequently there is no need for clause 6.01 obligating the transferee company to pay one per cent on all its
annual sales as consideration for the transfer of technology and services, in that the transferor company shares in the profits of the company.

In light of the views expressed in (c) above a royalty free licence should have been insisted upon. The one per cent share on all annual sales as a fee for the technology supplied by transferor, in our view, should be seen as a further mechanism through which further externalization of funds from Zambia is being perpetuated.

(d) The agreement does not commit the transferor to train Zambians. Everything is left to what the agreement calls the good judgement of the transferor.

(e) The transferor company does not commit itself to any transfer of technology which is the subject of the agreement.

(f) In clauses 2.01 and 2.02 the commitment by the transferor company is only in relation to the products, manufactured by it for sale in Zambia.

Further the transferor reserves the right to decide whether or not the transferee can manufacture, pack or distribute the product.

In our view all that the agreement has achieved is to create a market for all the products of the transferor company in Zambia, and it is doubtful whether technology
transfer will ever take place through the process.

The agreement reflects the inequality that exists between the negotiating teams of the LDCS and the multinational corporations. Technology transfer agreements between enterprises from LDCS and the multinational corporations cannot be truly described as arm's length transactions rooted in the free will of parties of equal bargaining power, because of the superior negotiating skills, knowledge and more favourable bargaining position which MNCS usually command at the inception of the relationship. 56

(d) General Clauses in technology transfer agreements

Studies have shown that technology transfer arrangements are not always successful. 57 Under the turnkey agreements, for example, the obligation of the transferor is limited to handing over to the transferee the plant, which when turned on is able to run, and if the demonstration or trial run shows the plant to be working the transferor becomes functus officio. The post-commission problems under the agreement therefore are not the responsibility of the transferor.

It has been stated that this situation arises as a result of LDCS inability to negotiate better terms for themselves. 58 The solution as already mentioned, lies in LDCS training their own negotiators, who would then be in a position to hold negotiations and ensure that necessary
guarantees are incorporated in the contract.

The guarantees necessary have been identified by an ad hoc UNCTAD/UNIDO Group of Experts on Trade and Trade Related Aspects of industrial collaboration arrangements; and one of the guarantees the Group has stressed as being important is the performance bond. The purpose of the bond is for the guarantor to guarantee to indemnify the purchaser of the technology, should the contract fail to work in accordance with the specifications, terms and warranties of the contract.

The bond performance clause entitles the purchaser to hold on to a specified percentage of the contract price for a specified period of time to serve as a financial security for the transferor's due performance of the contract.

When, however the transferee or recipient of technology insists on a performance bond the chances are that it might lead to a delay in effecting the technology transfer. Further it may lead to an increase in the cost price of the technology to be acquired.

For the two reasons advanced against the performance bonds, LDGS could prevent the delay and the escalation of costs by employing other general clauses like technical expertise clauses, hardship clauses and arbitration clauses.
The general clauses in technology transfer agreements are: hardship clauses, technical expertise clauses and arbitration clauses. The clauses are defined as "general" because they are non specific, that is, they are not peculiar to technology transfer agreements. In fact they are found in all contracts.

The presumptions in favour of the General Clauses is that, despite the mutual confidence that the parties may have in each other, differences can arise between them concerning the application of the terms and conditions of the technology transfer agreement which they have concluded. The misunderstanding could arise due to the divergent legal, technical, economic, social, cultural and political consideration of the transferor of technology and his transferee, and the governmental interest. The government might want to ensure that the legal arrangements between the parties for the acquisition of the technology are fair and reasonable and that they are for the furtherance of the economic development of the country.

(i) **Hardship Clauses**

Hardship clauses are often used in international and long term contracts. They constitute a method by which parties may perform a contract whose equilibrium has been disturbed by the occurrence of an inevitable event. In
other words we can define the hardship clause as that according to which the parties may request re-arrangement of the initial contract linking them, due to an inevitable change or changed circumstances, which has the effect of causing either the transferee or the transferor to bear an unfair burden.

The hardship clause is a legal mechanism through which the renegotiation of the contract could be done. Renegotiation could be necessary if for example, there are changes in the market conditions, in terms of the extent of production and consumption, permanent threat of change in the exchange rates in which the contractual consideration are expressed, like the auctioning of the Zambian Kwacha, and changes in the method of production and transformation. Changes such as these may cause price changes which could result in the continued existence of the contract being called into question. 64

For a number of LDCS the performance of a contract of technology transfer is of primary importance not only for the parties, due to their interests at stake, and the financial benefits likely to arise from the arrangement, but also for the States of which the parties are nationals.

States are interested in successful technology transfer, because of the beneficial effects technology has on the nation. The benefits include the creation of employment for the nationals and improvement in the foreign exchange situation, in that once a particular technology has been
acquired, for instance the technology relating to the production of fertilizer, it may mean that the country would no longer import fertiliser except to meet the shortfall in production.65

The advantage of the hardship clauses lies in that it enables the parties to the contract to renegotiate the contract. Further it aims at establishing the equilibrium of the contract. In other words the aim is to put the parties in the position they would have been had it not been for the changed circumstances.

From the data available on the use of hardship clauses.66 It is clear that the LDCS have not yet taken advantage of incorporating the same in the contracts they have entered into. The omission could be due to their inability to negotiate or lack of knowledge of what clauses they should include in technology transfer agreements. Further it would appear there is a lack of knowledge as to when the hardship clauses could be invoked.

From the studies done by WIPO67 it would appear that, the event needed to trigger the implementation of hardship clause has to be external to the parties. In other words, the events calling for the modification to the contract must not be imputable to neither, the transferor or the transferee.

Similarly the events bringing into effect the hardship clause must be of a certain importance and of such a degree as
to justify that re-adjustment of the contract. The changing
of the law, or changes in foreign exchange earnings could be
such an event.

Unfortunately for a number of LDCS hardship clauses are
never considered at the time of concluding the contracts. The
typical example we can give here in that of Zambia. In 1970
Zambia acquired 51% of shares in RCM and NCCM. Following
the acquisition of the majority of the shares in the mining
companies the Government had to negotiate for management
contracts with the two Mining Companies.

Part of the agreements reached were that the Zambian
Government

(1) should not raise the levels of taxation on the
mining companies,

(2) should not change the exchange control regulation

(3) should not change the Mining laws to the detriment of
the two mining companies

(4) should join the International Centre for the
Settlement of Investment Disputes (ICSID) and

(5) that the government should give the management of the
two companies to the management contractors, who
would have a final say on all matters affecting the
day-to-day administration of the companies.69

By 1972 the management contracts the Government had
entered into became unacceptable, and could no longer be tolerated. The contracts did not incorporate hardship clauses in them, and therefore the Government could not request for the rearrangement of the initial contracts. The Government had to terminate the management contracts replacing them with personal contracts of service, at a considerable cost.

It would appear that conflicts in the field of technology transfer will continue to arise. To ensure a smooth settlement of disputes and fair play in the technology transfer arrangements, it is hoped that the need for hardship clauses would be appreciated by the LDCS so that they could be included in all future technology transfer agreements.

(ii) Technical Expertise Clause

A technical expertise clause in a technology transfer agreement provides that in the event of a technical difficulty, which arises in relation to the technology, and where the parties do not agree as to who has the duty to remedy such difficulty, the parties to the contract may refer to an expert for a decision.

The clause should specify the manner of appointment of the expert, and good sense suggests that provision be made for the appointment of a technical expert by an international
organization, like those falling within the United Nations Group, whose neutrality may be counted on. This procedure is commonly referred to as mediation as opposed to arbitration where parties involved submit a dispute to private individuals for a decision rather than to a court. 70

For LDCS with little or no experience in the negotiation of technology transfer arrangements it would appear insisting on a technical expertise clause would be a safety catch to cover up for certain deficiencies in negotiations. The technical expertise clause would also tend to remind the transferor of technology that it is a basic tenet of technology transfer agreements that good faith and common objectives are fundamental to the success of the contract. Good faith must be the basis of such agreements, because it would be impossible to expect negotiators from LDCS to negotiate for every eventuality.

(iii) **Arbitration Clauses**

In technology transfer agreements, disputes are bound to arise, and when they do arise there is need to have them settled quickly. For this reason arbitration is preferred to court proceedings.

Arbitration is the procedure by which the parties involved submit a dispute to private individuals for decision rather than to a court. 71 Arbitration, however, is only possible if
the contract creating the rights and obligations of the parties has an arbitration clause.

Where arbitration has been provided for, the clause usually stipulates the law to govern their contracts,\(^{72}\) the place and language of arbitration, the nature of disputes subject to arbitration, and the arbitral jurisdiction of the parties (that is, a choice between a permanent institution that has dealings in International Commercial arbitration or the parties setting up the arbitral tribunal themselves).

The advantages of arbitration are that it secures a decision more speedily than court proceedings; arbitrators are chosen by the parties on the basis of their competence and their fairness; the effecting of the payment or the decision of an arbitrator is voluntary and is usually quicker than effecting the decision of the court, and the procedure before arbitration tribunals are faster, simpler and the decision are generally not subject to any publication.\(^{71}\)

(iv) **Observations on arbitration**

Arbitration can be referred to a number of institutions. The prominent institutions are the International Chamber of Commerce and the International Centre for the Settlement of Investment Disputes (ICSID).

Studies by the United Nations suggest that where the
law allows parties, particularly those from LDCS they should
endeavour to adopt the United Nations Commission on
International Trade Law (UNCITRAL) Arbitration Rules. These
Rules were adopted by the UNCITRAL at its ninth session,72
and approved by the United Nations General Assembly.73 Some
of these Rules have since been incorporated in WIPO's
Licensing Guide for Developing countries.74

The UNCITRAL Arbitration Rules are unique in that they
are universal, unlike those falling under the Settlement of
Investment Dispute Convention. If UNCITRAL Rules are adopted,
they offer brighter prospects for enforcement of the dispute.

In conclusion it is recommended that LDCS should pay
special attention to how the arbitration clauses are worded.
In particular they should insist on where possible argue
for the law in their respective countries to be applied in the
settlement of the dispute. Further, in view of the expenses
involved in settling disputes, LDCS should pay attention to the
view that have been expressed by UNIDO, that they should pay
attention to the locality where arbitration has to be conducted.75
If possible LDCS should insist on arbitration to take place in
their countries. Further LDCS must ensure that parties are
agreed on who has to bear the costs of arbitration.
CHAPTER THREE

FOOTNOTES

1. Examples include, the Livingstone Motor Assemblers Limited, Licensing Agreement; the Management Service Contract signed by the Government and the Mining Companies in 1970; and the technical service agreement signed between The Welcome Foundation Limited and Cooper Zambia Limited. For details see the respective company files at the Ministry of Commerce and Industry, Lusaka.

2. Capital goods here refer to the tools, Machinery and plants for the production of industrial goods.


5. Ibid


7. See (1962) 1 W.L.R. 425 per Lord Redcliffe at p. 431.

8. Strictly a man does not need a licence unless he wishes to do something that is forbidden by law, such as infringing a patent. Patent Laws and Trademark Laws form part of what is known as industrial property law. The principal instrument in this area being the Paris Convention of March 20, 1883 for the Protection of Industrial Property.

9. Chapter 692 of the Laws of Zambia

10. The Department of Industry is responsible for vetting the licenses

11. This is so in terms of Zambia Patent Act Section 28 (4) and also many other countries e.g. United States of America Patent Act, which in Section 261 states that Patents shall have the attributes of personal property.

13. Patent office is established under section 3 of the Patent Act. Since the establishment of EARIPO now Africa Regional Industrial Property Office (ARIPO) comprising of all Eastern and Southern African countries with the exception of Mozambique, Angola and South Africa, the move is towards the grant of ARIPO Patents on behalf of the designated Member States. That is applicants for Patent grants in Zambia will in future have to go to ARIPO.


15. Ibid Sect 30 (4) (1)

16. Ibid S. 18(1)(c) and 2 respectively

17. Ibid S. 37

18. Ibid S. 37(i)

19. Ibid S. 37(6)(a)

20. Ibid S. 49


23. See Zambia Patent Act Section 18(1)(c)


25. Zambia Patents Act Section 49

26. See Ibid Section 14(3)

27. UNIDO: Development and Transfer of Technology series No. 12; New York (1979) p. 10

28. The study by R.J. Barnet and R.E. Muller shows that almost all of Japan's acquisition of new technology has been through the medium of patent licensing rather than foreign investment see Barnet and Muller, Global Reach: The Power of Multinational Corporations Jonathan cape Ltd. London (1975)
29. See Appendix 1

30. Article 5.1 see appendix 1

31. This approach is what the UN is advocating for in particular through its specialized agencies like WIPO, which warns that a legal document which combines licenses of two or more types of industrial property rights e.g. Patents and trademarks is vulnerable and may land a country in economic difficulties see WIPO: Licensing Guide for Developing Countries - Supra p. 37

32. The figure of US $94 Million is based on the data compiled by me on the basis of the data I collected during my research work.

33. For detailed analysis of technological locking and effects see. Africa Development Vol. No No. 2 (1977) at pp. 54-58.

34. Chairman's Statement, Indeco Annual Report 1965 p. 5

35. Ibid p. 5


37. Source: Indeco Annual Reports 1975/76

38. See study done by UNCITRAL contained in document: International contracts in Field of Industrial Development A/CN 9/191 of 16th May, 1980

39. See Ibid p. 10


41. See Ibid

42. See M. Benchikh: "Relations between transnational corporations and developing countries": UNIDO; Industry 2000-New Perspectives collected background papers: Vienna (1984) p. 149

43. Ibid p. 150-151

44. See INDECO Annual Report 1975/76

45. For the full discussion of the subject see UNCITRAL Document: International contracts in the field of Industrial Development A/CN 9/191 of 16th May, 1980
46. See Barnett and R.E. Muller: The Global Reach the Power of the Multinational Corporations; in particular Chapters 5 and 13 concerning brain drain by MNCS by removing qualified personnel from wherever they can find them for purposes of running MNCS enterprises.

47. WIPO. Licensing Guide p. 82 para 313


50. Ibid p. 181

51. Ibid p. 186

52. Source: Interviews by the Researcher with Mr. Lamba Simpito, INDESO House, August 22, 1984, Lusaka

53. Some examples are
(1) Chilanga Cement Ltd which maintains technical consultancy agreement with Irish cement Limited of Ireland.

(2) Pigott Maskew which maintain, a technical consultancy agreement with General Tyre and Rubber (PTY) company of South Africa.

(3) Chloride (Z) Limited which maintains a technical consultancy agreement with Chloride International of UK

(4) Ducon Limited which maintains a technical consultancy agreement with Imperial Chemical Industries Ltd. (ICI) of UK

(5) Zambia Bata Shoe Co. Ltd. which maintain a technical consultancy agreement with BATA Shoe Company of Canada.

54. Studies have been done by UNCITRAL Secretariat, on clauses that have to be incorporated in turnkey contracts, for the UNCITRAL Working Group on the establishment of a New International Economic Order. Studies are incorporated in UNCITRAL: Clauses Related to contracts for the Supply and construction of Large Industrial Works: Document A/CA.9/WP.7 with Addenda 1-6 1982 and UNCITRAL Draft Legal Guide on Drawing up contracts for construction of Industrial Works: Sample Chapter. Document A/CR.9/WGV/WP9. 1983.
Further studies have been done by the ad-hoc UNCTAD/UNIDO Group of Export on Trade and Trade Related Aspects of Industrial Collaboration Arrangement. See UNIDO: the invoking of the hardship clauses. Since Zambia established the Nitrogen Chemicals Fertiliser plant there has been a considerable reduction in fertiliser imports, except that it is difficult to compute the reduction in that in 1983 National Agricultural Marketing Board imported fertiliser to last for four years, despite the availability of fertiliser at Nitrogen Chemicals Ltd. in Kabwe, with the effect that N.C.Z. has not been able to sell its fertiliser. Consequently some employees have been asked to go on voluntary retirement. Model form of Turnkey Lump sum contract for the construction of a Fertiliser Plant UNIDO/PC 25/p. 11. UNIDO:

56. UNIDO: First Global study on capital goods industry Supra p.226
57. See Supra Footnote No. 58
58. See Ibid p. 11
59. WIPO: Licensing Guide Supra p. 134 Para 616
60. Ibid
61. Ibid Para 573 to 576 indicate some of the difficulties likely to arise in a contract and which might necessitate the invoking of the hardship clauses.
62. The typical example here is that of Breakfast Foods Zambia Limited which terminated the agreement with Quacker of UK, after the introduction of the auctioning of the Kwacha, in terms of the local currency, raising of $20,000 US Dollars was too expensive for the company. The exchange rate during auction period average K8.50 to a dollar. In 1980 when Breakfast Foods (Z) Ltd entered into the agreement with Quacker of UK, the exchange rate was K0.78 to $1 dollar.
63. Volume for page 98 which appears on page 99 of the bound volume.
64. WIPO: Licensing Guide Ibid 134
65. Ibid Para 617
66. cf C. Harvey: "International Corporation and Economic Independence:" A view from Zambia pp. 182-3 supra
67. Ibid, p.182-3
68. Mines Acquisition (Special Provisions) Act, 1970
70. Ibid p. 72
71. See WIPO: Licensing Guide p. 138 para 639 Supra
72. See Alberts Davis, note 70, Supra, p. 73
73. See UNCTRAL Arbitration Rules UN document A/31/17 (1975) pages 35-55
75. WIPO, Supra, p. 139
76. Ibid p. 138
77. Ibid p. 139 para 640
78. UNIDO: Guide lines for Evaluation of transfer of technology supra p.51
CHAPTER FOUR

GOVERNMENT REACTION TO TECHNOLOGY AND ITS TRANSFER

(a) Introduction

The Zambian Government, like those of other developing countries, has been concerned with the whole question of transfer of technology from the developed countries to developing country.\(^1\) Zambia has been an active participant in the negotiations held within UNCTAD and WIPO on all questions relating to transfer of technology.\(^2\)

In UNCTAD the negotiations are centred on the code of conduct on the transfer of technology.\(^3\) While in WIPO the negotiations are centred on the revision of the Paris Convention,\(^4\) which is the main legal instrument regulating transfer of technology through patents, trademarks and industrial design licensing.

Both the UNCTAD and WIPO projects are of potentially great legal and economic significance and have been taken seriously by the government of Zambia which as early as 1971 started paying attention to the condition under which technology is transferred to Zambia and established the Management Development and Advisory Service (MDAS).\(^5\) The functions of MDAS was to provide consultancy and coordinated management service to all the sectors of the
sectors of the Zambian economy.

Despite an early realization on the need to control the conditions under which the technology is transferred to Zambia, there are still many inherent difficulties that pertain to the legal framework of transfer. It would appear that in Zambia the question of technology has been looked at from many perspectives. The existence of so many pieces of legislation that treat technology transfer in isolation tend to render support to the view that the laws are unrationlized, and it would further appear that the trend in Zambia has been to enact laws specifically for the problems that present themselves.  

The basic instrument, in so far as transfer of technology is concerned, in Zambia has been the Patent Act. Patent Laws have been enacted for Zambia since the Federation of Rhodesia and Nyasaland.

Further, Zambia through the Federation of Rhodesia and Nyasaland has been a member of the Paris Convention. At independence in 1964, Zambia acceded to the convention. The Paris Convention is the basic international legal instrument on the protection of industrial property rights. National legislation like the Patents Act, and the Trademarks Act, are all ancillary to the Paris Convention.

The Patents and Trademarks Acts are part of the Government's incentives designed to stimulate industrialization
in Zambia. The industrial property rights set out the rights and obligations of transferors and transferees of technology. Apart from legislating industrial property laws as incentives and as a legal framework or technology transfer, technology transfer through know-how agreement and other contractual arrangements was not tackled until 1977 when the IDA was enacted. This, it would appear, followed the government's Policy of laissez faire. The Government believed that economic development has to be accomplished through private enterprise and that its responsibility was limited to the maintenance of stable government and providing the basic infrastructure. Transfer of technology through know-how agreements has been troublesome because of the history that led to the government take-over of privately-owned enterprises.

The Government abandoned this policy of leaving everything in Private hands and started participating through industrial projects initiated by Indeco.

While the Government was struggling to set up new industries, most foreign-controlled and local expatriate companies which made up most of the private sector were busy repatriating funds abroad, and very little attention was paid to reinvesting the money in Zambia.

To arrest the situation a series of basic economic reforms were introduced, with a view to giving
government a controlling interests in number of enterprises, among them the mining companies. The takeovers gave impetus to the establishment of the parastatal conglomerate, and with it the central theme of direct control of the enterprises taken over. The take over however - was not without problems.

Zambia's predicament in relation to take-overs was its lack of skilled manpower. Zambia found herself in a position where she had to rely on the organizational structure of the companies she had taken over for the provision of specialised and technical services such as the procurement of equipment for the mines, retention of consulting services, management services, processing and marketing.

It became apparent, and more so in relation to the mines, that mere acquisition of a majority equity interest, was not going to extricate Zambia from the global network of western transnational corporations and that of the incidents of the old international economic order. The government therefore strived to ensure that transfer of ownership was matched by a meaningful transfer of crucial managerial powers and the acquisition and mobilization of technical expertise for the purpose of effective management, without which the control of the Zambian economy would prove largely illusory.
The government hoped to achieve this by enacting laws specifically to curb the abuse, and in some situations the law has been aimed at fostering sub management skills of parastatals and other sectors of the Zambian economy.

As indicated above the Government's reaction to technology transfer has mainly been through pieces of legislation and to a limited extent through regional cooperation mainly through the Africa Regional Industrial Property Office (ARIPO).\textsuperscript{17}

It has been said that the problems experienced by Zambia in relation to the management contracts and particularly those signed with the mining companies, prompted the Zambian Government to establish the MDAS with a view to controlling future agreements in relation to technology transfer.\textsuperscript{18}

(b) The Management Service Board Act

When MDAS was established it was clearly indicate that during the third National Development Plan, it would be transformed into a self-financing national consulting body and that its services would be expanded and improved in order to assist parastatal organizations in upgrading their performance and efficiency.\textsuperscript{19}

The decision to turn MDAS into a Board was reached in
1978, by the Government, ILO and the UNDP. The agreement contains the proposals for setting up the Management Service Board as an independent unit, charged with the responsibility of providing, impartial advice, research, consultancy and training in priority areas of management.

The Government's view on the establishment of the Management Service Board (MSB) was stated thus:

"there are presently a number of foreign management consultants both in parastatal organizations and other sectors of our economy. Most of them are expensive and a constant drain on our foreign exchange... but... time has come for us to reduce dependence on this kind of imported expertise and to develop our own experienced team to offer the same services which will cost less and save us foreign exchange and which will be better qualified to take into consideration the policies and aspirations of the Party and its Government." 

It would appear therefore that the objective of the MSB is to help the Government implement certain policy directives and to conserve the foreign exchange which would otherwise be paid to foreign expatriates. The Government was confident that the MSB would make it unnecessary for any foreign management consultancy service to be imported.

In fact Parliament was informed that as soon as the Government was satisfied that the Board was in a position
to replace all foreign management services presently in the country, a complete ban would be imposed. Further parliament was informed that with the coming into force of the Management Services Board Act, no new Management consultancy contracts would be entered into or renewed by any parastatal body unless Government was satisfied that the same services were not available locally.\(^{24}\)

The management service Board Act came into force in 1981. Since then foreign consultancy can only be engaged with the approval of the Government.

The Management Service Act does not require the Board to disclose or publish the consultancy contracts that have been concluded under its auspices. The Board is reluctant to disclose what it has done, and what it is doing in specific details, and this reluctance has made it difficult to review the Board's performance.

However from Indeco's annual reports, it is apparent that since the take-over of private companies began in 1969, the move of the Board has been to advise Government to retain minority shareholders, administrative and technical arrangements through contracts.\(^{25}\)

And over time the policy has become clear, and the management contracts have been phased out or are in the process of being phased out and replaced where necessary with technical service or individual contracts of employment.\(^{26}\)
In Zambia technical service agreements constitute a new form of contractual arrangement between the Government and the purveyors of technology. Under technical service the transferor of technology is engaged to provide technical services for the execution of a project for specified fees, without any proprietary interest whether immediate or ultimate, in the production of the enterprise; and this to a limited extent helps the Government to effectively control the activity of an enterprise.

The establishment of the Management Service Board is a positive indication of the government's desire to regulate the terms under which the technology is to be acquired in Zambia. But it is unlikely that Zambia will be able to do away completely with the expatriate consultants as the MSB Act envisages, within the near future.

In certain sectors of the economy, like the mines and the Manufacturing Industry, Zambia lacks local professional managers. And for some time to come Zambia will have no option but to look elsewhere for assistance. 27

(c) The Industrial Development Act

The factors considered in chapter one have led to the repealing of the Pioneer Industries (Relief from Income Tax) Act of 1965, 28 and the enactment of the Industrial
Development Act of 1977, which though now repealed, its provisions have been incorporated in the Investment Act, of 1986.

The enactment of the Industrial Development Act suggests that the Pioneer Industries Act and other laws like the Patents and Trademarks Acts proved inadequate for the problems that had presented themselves such as transfer of technology and industrial licensing, which were considered unnecessary at the time of the Pioneer Industries Act.29

The Industrial Development Act varied the conditions under which technology could be acquired and set out the incentives to be enjoyed and by what categories of legal entities.

It is against this background that the Act was passed in 1977 and came into force in October the same year.30

The Industrial Development Act (IDA) reflected the government's desire to restructure the Zambian economy. The fundamental objective of the IDA was to provide a framework for indigenous economic development that conforms to the needs of the Zambian people.

The Act provided for the incentives to invest, the issuance of manufacturing licences to manufacturing enterprises, the vetting and the registration of contracts relating to
technology transfer and expertise to enterprises operating in Zambia. 31

Part 111 of the IDA consisted of four sections. Namely sections 14, 15, 16 and 17.

In Section 14(1) the Act introduced the requirement that all transfer of technology agreements had to be registered with the Ministry of Commerce and Industry as soon as they were made.

In Section 14(2) a penalty was introduced for the failure by any beneficiary to comply with the requirement of Section 14(1).

The penalty upon conviction was a fine not exceeding five hundred kwacha or to imprisonment for a term not exceeding six months or to both such fine and imprisonment.

It is our considered opinion however that nullification of the agreement for failure to register would have been more effective than the provision specifying imprisonment. Neither the transferor nor the transferee would like to have their contract nullified and would ensure that it gets registered. Further, in situations where the beneficiary or recipient of the technology is a limited liability company, imprisonment would be practicable. It should also be pointed out that the section requiring registration is ineffective in that, it does
not stipulate the time limit within which the contract has
to be registered. Limitation of the period within which
registration has to be effected is essential as without it, it
is difficult if not impossible to enforce section 14. Furthermore
the harmful effects which registration of the technology
transfer agreement is intended to bring to light will go on
unabated.

Section 15 of the Act requires that any royalties or fees
charged by the transferor should bear reasonable relationship
to the use of such technology or expertise, and makes it a
legal requirement that payment of royalties or fees shall
cease upon the lawful termination of the agreement. The
section stipulates the rights and obligations of the parties
to the agreement, including the right of the transferee to
the continued utilization of the technology or expertise after
the termination of the agreement.

The requirement under section 15(b) to pay royalties was
perennial, in those instances where there was no termination.
We feel the Act should have drawn a distinction between those
agreements based on patents and related rights, and those
based on know-how. Licences whose royalty is based on know-how
should be limited to economic exploitation of the technology.
For licences based on patents payment period of fees or royalties
should be limited to the life of a patent.
Further it is our view that as soon as a third party acquires and uses such technology or expertise being the subject of the agreement, without the fault of the licensee, the technology or expertise in question should fall in public domain and payment of royalties should cease forthwith.

Transferors of technology who do not want to lose their royalties, should be advised to patent the process or the technology before the same can be licensed or transferred. In this way they will not only be protecting their interests but also those of the licensees too.  

Section 15(h) required that licensees should not be discriminated against. The licensor was under an obligation not to give a licence on more favourable terms to the subsequent licensees than those originally given to the first licensee. This provision, in so far as it treated all the licensees at par, was good but could lead to perpetuation of unfavourable terms even in situations where the subsequent licensees were able to detect flaws in the agreement. Changed circumstances should be accepted as inevitable and should call for the renegotiation of the original agreement and not to stick to most favoured licensee concept which puts everything in a static position.

Section 16 of the Act contained a lot of important provisions that went to the root of technology transfer's
failures and successes. Section 16 is therefore reproduced here in full.

Under section 16, Any contract for the transfer of technology and expertise shall not contain any condition:-

(a) which restricts the use of any competitive techniques;

(b) providing for any form of control over management of the licensee’s enterprise;

(c) which restricts the manner of sale of products or the export of product to any country;

(d) which restricts the source of supply of inputs;

(e) which restricts the volume or structure of production;

(f) which limits the ways in which any patent or other know-how may be used;

(g) which provides for the payment of royalties or fees in foreign currencies or outside Zambia except with the approval of the Bank of Zambia.

The provisions of section 16 were in general terms well intentioned. The practical problems to which the Section had addressed itself were however difficult to
resolve. The section in general prohibited the incorporation of restrictive trade practices in the technology transfer agreements. The aim of restricting restrictive trade practices in the agreements was to ensure that technology transfer resulted in technology adaptation by the recipient country.

Section 16 incorporated the provisions of Section 37 and 49 of the Zambia Patent Act, dealing with restrictive practices.

Section 16(b) touched what has become a problem area in the transfer of technology process, namely the question of control of the management of an enterprise. In Zambia almost always the management of the company affairs is entrusted in the hands of directors of the company. The IDA's prohibition of interfering with the management of the licensee's enterprise gives recognition to the current company law and practice where management of the affairs of the company is left in the hands of the directors and the company in the general meeting.

The issues of control have been very troublesome, particularly in the extractive sector of the Zambian economy namely, the mines, where through the management contracts, the management of the mines was left in the management contractors. Until Zambia realized that control as applied to corporate
operation is an elusive term. It is at times exerted on a company by persons who might not even in any way be linked to the company. 35

It has been acknowledged widely that control of an enterprise, in situations where there is a management contract is a difficult matter, and may elude a government even after nationalization. 36

Further it should be pointed out that even though section 16(b) purports to curb any form of control over the management of the licensee’s enterprise, section 16 in subsection (e) requires the licensor to assist the licensee in the marketing programmes and purchasing of equipment. While subsection (g) requires the licensor to continue to supply the spare parts and raw materials to the licensee. These requirements it is submitted open doors to other forms of control over the management of the licensee’s enterprise, such as through transfer pricing, over-pricing, underpricing and over-invoicing of exports and imports.

It is unlikely that the question of control can be resolved, as long as an enterprise is under any form of management contract or technical service agreement.

We feel that the problem of control can best be resolved by Zambia acquiring enough local skilled manpower, and the localization of research and development so that whenever
technology is acquired from abroad it can go through the process of adaptation.

The enactment of the IDA by Zambia was not a panacea to all the problems that are connected with technology transfer. This is evidenced by the case study of the Livingstone Motor Assembler Limited Licensing agreement, where it is shown that despite the fact that the licensing agreement was amended in 1981, long after the IDA came into force, the renegotiated agreement still restricted the manner of selling the motor vehicles, and the use of local raw materials in substitution to those imported from Italy Fiat Auto Spa. The Agreement restricts the volume or structure of production, and obligates LMA to pay expatriate staff seconded to it by Fiat Auto Spa of Italy, salaries and other fees in US dollars to the expatriates's bank accounts in Italy.

Under Section 17 of the IDA the Minister of Commerce and Industry was empowered through statutory instruments to regulate:-

(a) the payment of royalties or fees

(b) the conditions under which technical assistance could be negotiated or accepted.

Despite the existence of this provision in the IDA, Zambia like many other LDCS had problems in assessing the appropriateness of the technology and cost. The difficulty
arose partly from the fact that the market for technology protected by patents, trademarks, commercial and trade secrets and by semi monopolistic control is largely imperfect. 37 This is so even where there are technology regulatory or agencies working within the framework of established policies. 38

Further the composite nature of the technology package makes it extremely difficult to assess the reasonableness of the cost of one part of the package in relation to the other.

Further still even in situations where the Minister was empowered to control the fees payable for technology transfer agreements, other economic factors might have made him not to. Up to the present moment choice of technology is often restricted by availability of foreign exchange and lack of knowledge of alternative technologies. Further even in situations where a considerable degree of choice was possible, historical and trade relationships played a major part in determining the country and the source from which technology had to be obtained rather than mere knowledge.

These practical problems recounted above help to explain why, since 1977 when the Industrial Development Act came into force, no regulations have been framed. 39 This failure implies that determination of rates of royalties
and fees is still in private hands. Yet both the cost and the payment terms in the transfer of technology are vital to the success of the transfer.

Zambian negotiators have to be provided with the pricing formulae. Taking the turnkey contract for example, the transferee (licensee) of technology is faced at one end of the spectrum with the lumpsum method of pricing and at the other end with the cost plus percentage cost.

Under lumpsum, the transferor undertakes to design and construct the plant in exchange for a lumpsum of money, while under cost plus percentage cost the total cost of the project to the transferor can only be calculated on completion of the project since the transferee under this method undertakes to re-imburse the transferor the cost of putting up the plant together with a fee based on percentage of such costs.

The two formulae recounted above have got their own disadvantages in so far as the same relate to turn key contracts. The lump sum method on the face of it looks attractive in that the parties know exactly the cost of the project. The lumpsum method however is not good for two reasons: in that if the prices spiral, this method can lead to the abandonment of the project by the transferor, and that the transferor may adopt cost saving measures which are
unjustified leading to shoddy work. The cost plus percentage cost method on the other hand lead to the transferor leading the cost of the project to exhitibitant levels.

In between the two methods discussed above are:

(a) guaranteed Maximum, where the transferor agree to accept his cost plus a fee. Should the transferor finish the work for a lesser amount than stipulated, it becomes a condition of the contract that he shall be entitled to share in the savings thus made.

(b) Mixed lumpsum-cost plus - under this arrangement the transferor undertakes the construction of the project on a cost re-imbursable basis. The supply of machinery and know-how has to be paid for on a lump sum basis.

Given the complexities involved in calculating the rate of royalties or fees to be paid it would have been better for the Minister to come up with the regulations necessary. Unless this was done it is our considered opinion that unwarranted externalization of Zambia's meagre foreign exchange would go on unabated.
(i) **Registration and Vetting of Agreements**

Registration and vetting of technology transfer under part 111 of the IDA was a culmination of government's reaction to technology transfer. Vetting and registration of the agreement are seen as mechanisms of control, in ensuring that restrictive terms were not incorporated in the agreement.

It has been said that despite the Government's desire to control technology flow into Zambia through the implementation of Part 111 of the IDA, this had not been fully implemented.\(^40\)

Failure to implement Part 111 of the IDA has been attributed to administrative difficulties at the Ministry of Commerce and Industry and other Government agencies, and also to the ignorance of the category of people to whom the IDA is addressed.

First, the Department of Industry is charged with the responsibility of administering the IDA.\(^41\) To do the job there are eleven economists. These are expected to analyse the feasibility studies submitted in accordance with section 4 of the IDA. In terms of section 3 of the IDA no goods can be manufactured in Zambia without first obtaining a manufacturing licence from the Ministry of Commerce and Industry.
The application for a manufacturing licence was to
be accompanied, among many other things, by a comprehensive
feasibility study showing the economic viability of the
proposed enterprise and describing the technology to be
used therein.\textsuperscript{42}

Interviews with a number of officers in the Ministry
of Commerce and Industry and the Department of Industry, in
particular, revealed that they have great difficulties in
analysing the licensing agreement pertaining to technology
transfer, because most of the agreements have their terms
couched in legal language in which the economists who are
expected to analyse the agreements have had no training.

Second, the IDA provides that transfer of technology
agreements be registered with the Minister.\textsuperscript{43} In practice
the Ministry of Commerce and Industry does not register the
agreements. Registration of transfer of technology
agreements are however, registered at the Bank of Zambia.
The purpose of registration at the Bank is to ascertain
and monitor the repatriation of royalties and management fees.

Vetting of the terms of the technology transfer
agreement is not done, and as a result there is no document
at the Ministry of Commerce and Industry which can be
referred to as the register of transfer of technology
agreements.
The vetting that the economists do is aimed at evaluating the likely impact of allowing a particular enterprise to go into manufacturing on the economy. In almost all the situations where a transfer of technology agreement has been submitted to the Department of Industry, it has been submitted not in compliance with section 14(1) of the IDA, but being incidental to the manufacturing licence requirements. In other words the transfer of technology agreements that have been considered by the Ministry have been submitted in an effort to obtain a manufacturing licence. It may be noted that before a manufacturing licence can be given the Department of Industry has to consider ten points aimed at ascertaining what the technology is supposed to achieve in relation to the production of goods and not to what terms should be included in the agreement.

Among the ten points the officials have to consider there is a conspicuous absence of one factor which is always at the core of technology transfer agreements, namely the legal status of the technology to be transferred, that is whether the technology to be acquired is protected by industrial property rights or trade secrets. If it is protected by industrial property rights, the rights have to be in force in Zambia. If there are not protected the negotiators or the vetting team have to ensure that payment of royalties is excluded from the agreement.
If the technology is only protected by trade secrets, the licensee must seek an undertaking from the licensor as to their claim as proprietors of the technology as well as to guarantee that there will be no competitors in relation with the Zambian market. Further, the licensee should ensure that the licensor indicates the technical character of the know-how to be acquired and guarantee that it will encourage technology adaptation and not dependence.

(ii) Coordination

Addressing the UNIP National Council at Mulungushi Hall, President Kaunda said that science and technology is a field of activity under Humanism which the Party leadership has hardly started to grasp. The President further stated that while for organized research Zambia has the National Council for Scientific Research, she does not have an agency that preoccupies itself with the exploration and coordination of technology in Zambia. While President Kaunda’s sentiments may be true, we are of the opinion that Zambia has institutions that can explore and coordinate technology transfer. One of the custodians is the Zambia Patent Office. We do however share President Kaunda’s views vis a vis the coordination of efforts.

The hindrance to the realization of coordinated effort as
we see it in so far as technology transfer is concerned, has been the Government's failure to come up with appropriate government policies and procedures at an earlier date. When the outline of the Government's Industrial Policy was launched in 1966, the question of technology transfer and control were never even considered. The private sector was left free to do as it pleased. It is not therefore surprising that in the administration of technology transfer there has been no coordination between the various government agencies despite the existence of a basic legal framework, which is a prerequisite to any successful transfer of technology, within which the parties to a transaction can fix their respective rights and obligations.

It may be worthy of mention that the Zambia Patent Office is one of the basic infrastructures there is in the country for affecting and monitoring of technology transfer. This office came into operation long before the IDA did and cannot therefore be viewed as one of the institutions that has come up as a reaction to technology transfer. It is being considered here purely in relation to the need to coordinate government's effort in technology transfer.

The task of the Patent Office is to administer the Patent Act. The Act in section 49, like the IDA does in Section 16, prohibits inclusion of certain restrictive
conditions in contracts relating to technology transfer. In Section 37 abuses of Patent rights are categorised.

One of the functions of the Patent Office is to grant Patents, and in the process to carry out patent documentation, for all the patents that are filed or granted in Zambia.

Being the custodian of the patents, the Patent office can indicate the legal status of any of the patents in Zambia and indeed of any patent in the world through its connections, with the International Patent Documentation Centre (INPADOC) in Vienna, the World Intellectual Property Organization (WIPO), the Patent Cooperation Treaty, and through a host of other countries where there is cooperation through Patent documents exchange programmes, through ARIP0, and through the technical aid programme of WIPO, to Zambia and other developing countries. Through technical agreements WIPO has signed with a number of Industrialized countries, WIPO can and does conduct search requests made to it from Patent Offices from LDCS, a service which LDCS could not obtain if they were to make a direct request to enterprises in industrialized countries.

In addition to stating the legal status of various technologies in Zambia and elsewhere the Patent Office is able to pin point whether an agreement contains restrictive terms.

Through its world wide connections the Patent Office is
also able to advise on the availability of technology in
Zambia and elsewhere, to indicate alternative technologies.

It is our considered opinion that the Patent Office of
Zambia, which enjoys cooperation in the field of technology
transfer throughout the world, would have been a proper
agency to entrust with the administration of Part III of the
IDA. The Patent Office does not only have the resources in
terms of personnel and capabilities but it is also well
disposed when it comes to scrutinising and approving the
terms and conditions of the legal arrangements that the party
may intend to conclude. Better still the Department of
Industry should work as a team with the Patent Office.
After all they are under one Ministry and operate from the
same building.

On the whole, when the advantages of the Patent Office
are weighed against those of the Department of Industry, the
Patent Office has a lot of advantages. The Patent Office has
the necessary infrastructure to tackle the vetting of
technology transfer agreements. The Patent Office has patent
documentation and personnel that can consult various documents
and literature and be able to decipher the same and render
advice. On the other hand the Department of Industry has no
Patent documents, and its staff consists only of administrators
and economists who are not familiar with the operation of the
world patent system.
Patent documents in the field of technology transfer are important. Patent documents contain information up to the point of application in industries. With the support of the Patent Office which has Patent documentation and other technical information, the transforee can have access to major relevant sources of information and can therefore have an opportunity of critically analysing and indentifying and selecting appropriate technology, that is linked to patents.

If documentation is properly used, it can help the transforee to improve his bargaining power in the acquisition process, and by involving the Patent Office, it means the negotiating team will be consisting of people who are qualified in the field of licensing and technology transfer. In our view therefore Patent documents constitute a buyer’s guide, providing information of a kind that no trade directory can provide.

(d) **The Investment Act, 1986**

Zambia in further attempts to develop, and encourage investment in the country, and in an effort to promote effective employment and development of skills and technology, has repealed the Industrial Development Act.\(^55\)

In as far as technology transfer is concerned the
Investment Act, is a further measure by the Government to secure technology under fair and reasonable terms. The investment Act retains almost all the Provisions of Part III of the IDA. 56

Under the Investment Act, there is a provision for the establishment of the Investment Council. 57 As under the IDA, every agreement for the transfer of foreign technology or expertise has to be registered with the Director of Investments. The responsibility to register is placed on any beneficiary of the technology as soon as the agreement is made. 58 The Director of Investments has to cause to be registered every agreement for the transfer of foreign technology or expertise, and he is obliged to maintain a register in which all details pertaining to the transfer and the technology have to be entered. 59

The Investment Council would probably still experience the same problems as those experienced by the Department of Industry while administering the IDA. The smooth implementation of the Investment Act would depend on the cooperation the Investment Council will receive from the Patent Office and the Management Service Board. The activities and services provided by both the Patent Office and the Management Service Board are however not included nor referred to in the Act, and it would appear therefore that the Investment Council will run independently of all the other bodies currently doing some work relating to technology transfer.
FOOTNOTES


3. See draft code TD/CODE TOT/41

4. See footnote 2 Supra


6. Pieces of legislation include, the Patents Act, the Management service Board Act, the Industrial Development Act, the Investment Act

7. Patent Law has been in Zambia since the Federation of Rhodesia and Nyasaland Patents Act, Act No. 13 of 1957

8. See Federal Government Notice No. 39 of 1958

9. See Government Notice No. 1751 of 1965

10. The Paris Convention of 1883 imposes major substantive limitation on Patent System of Member States, in particular as regards sanctions for non working or other abuses of the Patent grants. The Important Provisions are contained in Article 2, 3, 4, and 5.


13. See Government Outline of Industrial Policy Supra P.5
14. President Kaunda: *Towards Economic Independence* Supra

15. The reforms have been categorised as the Mulungushi Reforms. They affected large private enterprises. The Matero Reforms affected the Mines - as a result the Government acquired 51% shares in each of the Mining Companies, RCM and NCCM.


17. ARlPO - was originally called Industrial Property Organization for English-Speaking Africa. It was established under a diplomatic Conference held in Lusaka on December 7, 1976. Membership was open to all English Speaking African Countries - Membership has since been extended to all countries in Eastern and Southern Africa with the exception of South Africa.


20. See Management Development and Advisory Services *Zambia 77/008*.


23. See Ibid Column 3664

24. Ibid Column 3664.

25. Source: See *Indeco Annual Reports for 1975/76*


27. See findings of the UN/ECA/FAO. *Economic Survey Mission on the Economic Development of Zambia* Falcon Press Limited Ndola (1964) p. 87. To date the situation seems to be the
same particularly in the accounting field this is based on the findings made by the Researcher in almost all the manufacturing enterprises on the Copperbelt, Lusaka and Livingstone which were found to be employing expatriate personnel.

28. As its title suggests, the Act aimed at encouraging the development and the diversification of Industries like never before on a scale suitable to the economy and to provide tax incentives for this purpose. See Zambia; Outline of the Government's Industrial Policy Lusaka (1966) p. 1 Supra.


31. See Preamble to the IDA of Zambia Chapter 674.

32. See Africa Development Supra p. 5

33. Related rights are those falling within the industrial property rights like trademarks and designs whose continued existence is regulated by Law. The Trademarks Act of Zambia regulates rights and obligations pertaining to trademarks and so is the Registered Designs Act, which regulates the designs.

34. The life of a Patent in Zambia is 16 years. See Patent Act section 29


36. The Zambian Government could not tolerate the continued existence of the management contracts with the mines. Consequently in 1973 it terminated the contracts at a very high cost to it - see President Kaunda's address August 31, 1973 - reproduced in volume 73, American Journal of International Law at p. 355.

37. See the views expressed by the arbitrators in Anaconda Company V. Overseas Private Investment Corporation - American Journal of International Law Vol. 73 of (1979) p. 346 where the the case has been reviewed. See also views expressed by Samuel Asante: "Stability of International Relations in Transnational Investment Process": I.C.L.Q (1977) 401

38. See UNIDO: Guidelines for Evaluation of Transfer of Technology Agreement p. 13 Supra.
39. Agencies like the Department of Industry in the Ministry of Commerce and Industry in Zambia which is charged with the responsibility of vetting documents relating to technology transfer, lack the skill and experience to effectively evaluate the agreements.


41. Ibid

42. Ibid. The IDA has been repealed but its provisions continue to be operative and the same application forms for manufacturing licenses are still used.

43. Among the people interviewed were Messrs. S. Banda and Mr. G.L. Mubanga.

44. Source: Information obtained from officials at the Ministry of Commerce and Industry. This clearly tend to show that law and practice are at variance.

45. President Kaunda: "Economic Development: a guide on how to clear obstacles"; An address to the UNIP National Council October 8, 1979, p. 17

46. The Patent Office is established under the Zambia Patent Act Section 3.

47. See Republic of Zambia: Outline of the Government Industrial Policy, Supra.


49. See WIPO: general information, Geneva 1985, of the assistance the organization is able to give to LDCs. In particular see p. 54 INPADOC was established in 1972, pursuant to an agreement between Austria and WIPO. To date it has collection of Patents from all over the world.

50. See Ibid p. 49

51. See Ibid pp.49-55

52. See Ibid
53. See footnote 17, Supra

54. This can also be done through search requests by Zambia Patent Office to ARIFO in Harare, Zimbabwe.

55. See Ibid Part VII sections 36 to 39

56. Ibid Section 36

57. Ibid Section 36

58. Ibid Section 36

59. Ibid section 36
CHAPTER FIVE

INTERNATIONAL REACTION TO TECHNOLOGY AND ITS TRANSFER

Introduction

While Zambia's reaction to technology and its transfer has been limited to the local scene, it is worth noting that elsewhere and at the international level in particular, efforts are being made to regulate the conditions under which technology is transferred.

Generally it is agreed that technology transfer is essential if the LDCS are to industrialize. But what is in disagreement is the modality of transfer and the technology to be transferred. The LDCS, it has been said, are always in a dilemma when it comes to the indentification of the technology they require, and the determination of the social costs and social benefits of a particular technology. LDCS are often at a loss to know what to classify as cost and as benefits. It would appear that the problems of technology and its transfer are so compounded that individual countries are not in a position to tackle the problem separately. The basic problem, as we see it, is that technology transfer transactions entail exchange of technical information, goods and services, across national borders. Consequently the parties to a transfer of technology
agreement, in particular those connected with industrial property rights, have to apply and familiarise themselves with many foreign legal systems.

The laws in the field of technology transfer, save the Paris Convention, are not codified into a single international treaty to which all references in matters pertaining to technology transfer can be made. Even talking about the Paris Convention, it merely contains enabling provisions, and at the same time denies the LDCs the latitude to adopt legislative and administrative measures consistent with their levels of economic development.

However for as long as the Paris Convention remains unchanged it is unlikely that the LDCs will benefit from the technology transferred. This situation is largely due to LDCs' inability to negotiate and to evaluate the technology offered, and the fact that member states of the Paris union are precluded from enacting laws that departs from the provisions of the Paris Convention. The LDCs are convinced and rightly so, that the Paris Convention militates strongly against their successful technology transfer. LDCs are therefore proposing that the Convention be amended. In our view both the LDCs and DCS are at variance with each other on basic issues such as the provisions of the Paris
Convention, the implementation of the amendments proposed to the convention, the code of conduct on technology transfer, which is put forward as a counter proposal in the regulation of technology transfer.

This chapter therefore looks at what is being done at various levels in controlling the terms under which technology is transferred worldwide. Accordingly various interest groups and their views, namely LDCS, DCS and the UN and its specialized Agencies are considered below.

(a) **Position of the LDCS**

At regional levels among the LDCS the only significant effort in controlling the terms and conditions of technology transfer has been in the Southern American States. Under the provision of the Andean Pact, 1970, commonly referred to as the Cartagena Agreement of 1970, to which the Andean Group of countries are signatories, member countries under Article 24 are obliged to apply uniform conditions in evaluating contracts for technology and patents in their countries. Article 24 provides for a rejection of agreements that contain tie-in obligations with regard to purchase of materials and prescribes restrictive conditions on volume of production, use of alternative technology export rights, grant backs and the like.

Despite the 1970 Cartagena Agreement the Andean Group
of countries have not been able to control the terms under which technology is transferred to their countries. By 1975 there were still indications that of the 409 transfer of technology contracts between MNCS and their subsidiaries in Ecuador, Bolivia, Peru, Chile and Colombia 80 per cent of contracts prohibited the use of technology for producing exports. 6 This position is bound to continue until such a time that the Paris Convention would be amended to give these countries the latitude they need to control the MNCS and the terms of technology transfer. 7

In Africa legislation regulating technology transfer is virtually absent. Among the Member States of the preferential Trade Area for Eastern and Southern African States (PTA), for example, it is only Zambia which has legislation regulating technology transfer. 7

It is hoped that other PTA countries will emulate Zambia and adopt regulations aimed at controlling the condition under which technology is transferred. The ideal situation however would have been for the PTA countries to adopt a common stand more or less on the same pattern as the Andean Group of countries, thereby harmonizing their laws and policies. With harmonized rules and policies MNCS, the purveyors of technologies, cannot divide and rule among partner-states, but would have to work within a bargaining
reference more favourable to the interest of the member states.

At the international level LDCS are struggling to extricate themselves from the situation of dependence, and are pushing for institutional changes. The first call came at the sixth Special Session of the United Nations General Assembly, where the establishment of New International Economic Order (NIEO) and the programme of Action were declared.

The programme for the NIEO reflects an effort to outline the changes required in the main areas of North-South interaction including science and technology and industrialization. At the technological and industrial level, LDCS are seeking to adopt legal systems that will be consistent with their political, social and economic development. Consequently LDCS want the Paris Convention on Industrial Property amended. The Paris Convention as already seen, is the basic instrument which regulates industrial property law. Further the LDCS are striving for the adoption of an international code of conduct on technology transfer.

(i) Proposed Changes to the Paris Convention

The work on the revision of the Paris Convention began in 1975, with the appointment of an Ad Hoc Group of
Government Experts. The Group adopted a 14 point declaration, setting out the main objective of the LDCS. In a nutshell the 14 points aim to

(1) promote the actual working of inventions in each country where the protection is sought;
(2) assist the developing countries in strengthening their scientific and technological infrastructure and in the training of specialists;
(3) facilitate the development of technology by developing countries and improve the conditions for transfer of technology from DCS to LDCS under fair and reasonable terms; and finally;
(4) to give each country all latitude to adopt the legislative and administrative measures consistent with its needs and with its social and economic policy.

LDCS would in particular like articles 2 and 5 of the Convention amended. Article 2 requires that there be reciprocal obligation in all matters relating to industrial property. In other words the article requires the LDCS and DCS be treated equally. LDCS are opposed to this on the ground that it leads to inequitable reciprocity. It is our considered opinion that the principle of reciprocal obligations in international arrangements and in the Paris Convention, in
particular, is unrealistic. The insistence by the Convention on equal treatment is a clear manifestation that the Convention does not take into account the economic and political contexts of the member states which differ from one state to another, according to their degree of development, and which govern the application of a concept such as state sovereignty. As sovereign states, member states of the Paris Convention should be free to adopt any measure they deem fit.

The principle of reciprocal obligation fails to take into account the need for the developing countries to take appropriate measures aimed at reducing the existing discrepancies between the levels of progress of LDCS and DCs. Reciprocal obligations can only work among equals. It is therefore unrealistic that there should be reciprocal obligations between Zambia and the United States of America for instance.

Article 5 of the Paris Convention prevents member states from enacting laws that are inconsistent with the Convention. LDCS want this article amended so as to give them latitude to enact laws that are consistent with their economic aspirations, in particular to make it a condition of protection of any Patent in any LDC, that such a patent has to be worked in a country where protection or registration
of such a patent is sought.

The revision of the Paris Convention has not been effected. So far three conferences have been convened in order to amend the convention on the lines suggested by the Ad Hoc Government group of experts. To date all efforts to amend the convention have not produced any tangible results. LDCs have therefore shifted their attention to the adoption of a code of conduct on technology transfer. As we have seen above, despite the three conferences organised by WIPO to have the Paris Convention revised, at the end of the last conference the objectives of revision were far from being realized and the proposed reconvening of the conference towards the end of 1980s is viewed with scepticism.

(ii) Need for International Code of Conduct on Technology Transfer

Generally LDCs are agreed that there should be some form of control as regards the condition under which technology is transferred. LDCs demand for control so far has culminated in the proposals for the adoption of a code of conduct on technology transfer. Under the proposed code it is hoped that conditions under which the technology is transferred would be checked. The code will be considered later.
(iii) **LDCS reaction to multinational corporations**

Developing countries are in agreement that MNCS control the technology of the world, but they are suspicious of the technology that the MNCS are able to transfer. LDCS therefore are of the view that the conditions that exist between them and the MNC should be reviewed. The LDCS, and particularly those of Africa, are of the view that the activities of the transnational corporations should be basically compatible with the economic and social objectives of the host countries.\(^{13}\) To achieve that they have argued for the code of conduct on technology transfer as the only hope since it is unlikely for any individual state to control the activities of transnational corporations. Often transnational corporations (TNCS) pursue their activities beyond the legal and political powers of individual states. Consequently national rules regarding TNCS must be supplemented by international standards set by the international community.\(^{14}\)

The LDCS believe the code will bring about a more stable relationship between host states and TNCS and thereby create conditions for increased flows of international investment. Like the UNCTAD code on technology transfer, the United Nations Code of Conduct on Transnational Corporations has not been settled. The problem has been and continue to be the failure by the LDCS and DCS to agree on what amounts
to a transnational corporation, the nature of the code, and the scope of its application. The foregoing notwithstanding LDCS favour an effective instrument of control over TNCS: they are accordingly demanding a code that would be mandatory.

(b) The reaction of DCS

Developed countries and in particular the Western countries accept that technology is essential in the development strategies of LDCS. However they do not agree on the modalities of transfer.

Technology in DCS is considered as a mechanism of ensuring national security, and most DCS have adopted or created legal systems that protect economic operators willing to contribute to technical, scientific and economic progress through the transfer of their technology or more generally through the exchange of their commercially valuable know-how and good will.

The basic protection to the economic operators has been through the grant of industrial and commercial property rights in the field of patents, trademarks, copyrights and industrial designs. The rights usually grant the owner a monopoly in the country of protection in respect of selling
and or of manufacturing of the protected products incorporating his intellectual work. To ensure this protection, it is not surprising that all member states of the EEC have industrial property legislation.

When it comes to technology transfer, industrial property rights are treated as personal and private, and this is the root cause of difficulties. And at all fora DCS always adopt a position that protects enterprises operating in their countries. DCS' position on technology transfer can only be understood through their reactions to the proposed revision of the Paris Convention, the code of conduct on transnational corporations and the UNCTAD code of conduct on transfer of technology. They prefer the status quo.

The relationship between LDCS and DCS is a complex one. It is not just a question of whether LDCS benefit or lose from their co-existence with DCS, but rather it is a question of how LDCS can pursue selective policies that permit them to derive the benefits of technology transfer without simultaneously exposing themselves to its harmful effects.

Realising that LDCS are in a weak position to influence policies in DCS, the question becomes one of how can DCS be persuaded to adopt or design selective policies for aid, trade, foreign investment and technology transfer that would
be of benefit to LDCS. Attempts to this end have been made by the LDCS through the UN system by calling on DCS to help in remoulding the world institutions and particularly those that effect technology transfer.²¹

(i) **Stand on restrictive business practices**

It would appear that DCS are in agreement that restrictive business practices hinder trade including transfer of technology.²² To this effect Organization for Economic Cooperation and Development (OECD), has called on its members to be alert to the harmful effects on national and international trade which may result from abusive practices in which patentees and licensees may engage.²³ OECD further instructed the Committee of Experts on Restrictive Business Practices to keep under review how the member states were applying the recommendations of the OECD Council concerning action against restrictive business practices relating to the use of Patents and licences.²⁴

On an individual level, Canada in 1976 embarked on discussion towards the amendment of the Patent Act, with a view to prohibiting restrictive clauses in patent licensing agreements.²⁵ Not to be outdone the USA in 1980 adopted the Sherman Antitrust Act, making any arrangement in restraint of trade or commerce illegal.²⁶
For the EEC Countries the Treaty of Rome which came into effect on 1 January, 1958, obligates the member countries to abstain from any measures that are apt to jeopardise the realization of the Treaty's objectives. One of these objectives is the establishment of a system ensuring that competition shall not be distorted in the Common Market. Consequently all practices restraining competition are specifically prohibited. 27

While it is appreciated that legislation exists in OECD and EEC countries to combat restrictive practices, the multinational corporations operating from these countries have not adhered to legal provisions existing in their countries when it comes to licensing agreements outside their respective countries. The control of restrictive practices in patent licensing and their effective enforcement is therefore limited to the inward and not outward agreements. 28

Further it is our considered opinion that the activities of OECD and all other DCS will remain ineffective in the absence of internationally recognised rules of conduct, because a national enforcement agency and in particular from LDCS will be less able to proceed against multinational corporations. MNCS are capable of hiding the evidence necessary for proceedings against them in vaults in the
countries where they are least threatened.

Some of the MNCS are so powerful, that they can with impunity interfere in the most vital working of the life of a nation, even going so far as to disrupt it completely. Evidence of interference has been documented and Chile is usually cited as a typical example where MNCS were able to disrupt the smooth operation of the country.

(ii) Proposed revision of the Paris Convention

We have seen above that the Paris Convention is the basic instrument at the international level regulating technology transfer. When a conference was convened in 1980 to try and amend the Convention the DCS, referred to as Group B in the Conference paper, contended that the Convention can only be amended by unanimity.

DCS are opposed to the amendment of the Paris Convention and in particular to the alteration of Articles 2, 3, 4 and 5. DCS favour concepts such as national treatment, reciprocal obligations and right of priority to be preserved in the convention. As a result they will oppose any move aimed at controlling the industrial property rights which they maintain are private rights. They have thus argued that to water down the basic principles of the Paris Convention would be to compromise its usefulness. They prefer seeing the Paris Convention as a framework
treaty, that is: it is not intended to regulate individual situations in detail.

Group B countries, in particular, argue that the universal nature of the Paris Convention has enabled industrial property law to be harmonized and integrated at international, regional and sub regional levels. Any acts which tend to differ from the already established forms, they say, would fragment the Convention and would be unpragmatic.\textsuperscript{35}

At the first session of the Revision Exercise, Group B countries maintained that

"One of the main aims of this Convention is to facilitate the transfer of technology by setting up on the basis of isolated national rights a common international system referred to as minimum rights. The setting up of such a system is neither conceivable nor feasible unless the national rights involved are of the same type and have a similar content."\textsuperscript{36}

The DCS have maintained this stand throughout their arguments. If all the States Party to the Paris Convention are required to protect inventions on equal terms and DCS insist on that, we do not see how these same States would consider the possibility of introducing special measures for the benefit of LDCS, which they had pledged during preparatory stage of the Revision of the Paris Convention.\textsuperscript{37}

It is abundantly clear that since the revision began, no
positive indications have been forthcoming from the DCS's Camp to show the LDCS that they are for the revision of the Convention. It is a fair assessment that DCS are after maintaining the status quo. Consequently the solution to their predicament of being put at par with the DCS may depend on them as LDCS, by leaving the Paris Convention in which DCS enjoy a privileged position, and forming their own organization which could be able to take into account their underprivileged position, and enable them to counteract the activities of the DCS, by adopting a unified approach against the adversary, thereby reducing the alternatives from which DCS and their MNCS are free to choose.

(iii) Code of Conduct for the Transfer of Technology

The code, in the way it is conceived by the LDCS, is supposed to be transactional in that it will apply to all international technology transfers, that is technology that is transferred across national boundaries from a supplying party to an acquiring party.

The DCS do not agree with the LDCS view that transaction within the same country may be of an international nature if one of the parties is a company controlled by a foreign multinational corporation. They maintain that such a transaction is purely domestic and the Code should only apply
to situations in which technology crosses national boundaries.\textsuperscript{38}

If DCS' contention is incorporated in the Code, the Code's effectiveness will be eroded away in that a company wanting to sell technology to a developing country can avoid the effect of the Code by first establishing a subsidiary company in an intended country to transfer.

If accepted the most important component of the code is the chapter on restrictive practices. The Chapter lists 20 practices which are considered to be harmful to technology transfer. In principle DCS are agreed that restrictive practices should be prohibited. But the problem has been with the manner in which this has to be done.\textsuperscript{39}

DCS maintain that freedom of contract is sacrosanct, except when it restricts competition. They maintain that once a particular technology transfer agreement has been signed by the parties such agreement should govern their rights and obligations in accordance with the applicable law,\textsuperscript{40} and when it comes to the applicable law DCS espouse the principle that both parties should be free to choose the law governing the validity, performance and interpretation of the agreement.

In short DCS are agreeable to a Code of Conduct, but
have questioned both the scope of application of the Code and its legal value. The DCS want a Code that may take the form of directives with no obligatory effects as opposed to a Code in form of a universal multinational convention. DCS are opposed to having a Code that is international and binding. Instead they advocate for a Code that will be voluntary and non-binding. The DCS stand is not only unacceptable but does not meet the least expectations of the LDCS.

(iv) Stand on Multinations in LDCS

The operation of multinational corporations (MNC) is not well understood. When it comes to policies pursued by MNCs it is often difficult to draw a distinction between MNCs and their home governments. Most MNCs are a mere outgrowth of the countries where they originate. This is particularly so for the MNCs that originate from the United States of America, where evidence available supports the view that MNCs are merely out-growths of the United States of America.

Most DCS have fully acquiesced in the activities of MNCs and continue to supply them the sanctuary from which they plunder the LDCs' economies. It is also believed that, that is why DCS are committed to a Code of conduct on multinational corporations that is not binding and is flexible.
MNCS worldwide have a strong hold over technology and tend to manipulate the condition under which the same can be acquired. The strategy that the MNCS have adopted is to maintain maximum control over their technology, by maintaining all their research activities in their countries of origin.

In Latin America studies have revealed that of the 409 transfer of technology contracts between MNCS and their subsidiaries in Ecuador, Bolivia, Peru, Chile and Columbia, 80 per cent of the contracts prohibited the use of technology for producing goods for export. The same findings were arrived at in India, Pakistan, Philippines, Mexico and Iran. The interest of the MNCS in restricting competition is obvious and so are the adverse effects on poor countries seeking to earn scarce foreign exchange by exporting manufactured goods.

The technology which the LDCS have been getting from MNCS is conditional. In a number of situations it lead to creating a situation of technological dependence. The LDCS problem has been how to control the MNCS' technological power so that it is not abused to their detriment. Abuses that have been identified and most common include the transfer of obsolete and over-priced technology. Consequently LDCS have suffered in relation to transfer of technology in the field of employment, because they have surplus labour, but
the technology which they acquire is in most cases capital-intensive, and instead of making efficient use of the manpower of the LDCs, such transferred technology tends to convert LDCs human resources, which are their biggest assets, into social liabilities. 46

The need to control the activities of the MNCS has led LDCs to demand for a Code of conduct, capable of controlling the activities of the MNCS, and to be administered by the United Nations Centre on Transnational Corporations based in New York. The problem has been to agree on what form the control should take, and to review the inadequacies of the international controls that exist.

Through the OECD, DCS have already agreed to control the activities of MNCS. 47 The adoption of recommendations concerning action against restrictive practices by the council of OECD Member States, in our view, does not change anything in relation to LDCs. In the absence of internationally recognized rules of conduct, the adopted recommendations are ineffectual, and little attention, if any, should be paid to them. The solution to the problem of MNCS might lie in finding a solution to the proposals of the Economic and social council (ECOSOC) of the UN, which has been debating on whether the nature of controls envisaged in the Code should be incorporated into:—

(i) International treaty
(ii) International Code of conduct which may either be obligatory or optional

(iii) Voluntary guidelines

(iv) International legal constraints

(v) International institutions monitoring the working of MNCS or

(vi) Through the transfer of technology.

(i) International treaty

DCS are opposed to a treaty as a means of control. DCS maintain that such an arrangement might interfere with the normal running of their economies and their principle of free trade.

In our view an international treaty is not a suitable mechanisms of control. Treaties are entered into by States. MNCS are not usually resident in one State and this in our view makes the enforcement of a treaty against an individudal MNC difficult. The ideal situation would be to combine the provisions of a treaty with international legal constraints incorporated in the national laws of various countries. Through these arrangements, it is hoped MNCS could be controlled.

(ii) International Code of Conduct

The international code of conduct was the second option,
through which it was hoped the activities of MNCS could be controlled. The code categorises the activities that amount to restraint of trade. DCS and MNCS accept the code but would like it to be optional and voluntary. 48

(iii) Voluntary guidelines

MNCS are not opposed to having voluntary guidelines as these will be optional on MNCS. However, if the aim is to keep in check the activities of the MNCS, voluntary guidelines will not redress the imbalances that LDCS would like to have corrected.

(iv) International legal constraints

DCS are opposed to having international legal constraints incorporated in laws of various countries as a way of controlling MNCS. International legal constraints are totally rejected by the DCS on the ground that, legal constraints as envisaged by LDCS will constitute an interference in their internal affairs. In other words DCS consider MNCS as an internal matter and not one which should be subjected to international controls.

(v) International monitoring institution

DCS are not opposed to a monitoring institution on the
ground that it will not interfere with the operations of MNCS.

Already the Centre on Transnational Corporation exists in New York. It is more or less a monitoring institution, but its work is devoted to collecting data aimed at helping the international community, and LDCS in particular, to understand the operations of MNC.\textsuperscript{50} The Centre has no power to control. But it is doing a commendable job in bringing to the attention of the LDCS the activities and operations of MNCS.

(c) Views of the UN and its Agencies

In the UN circles it has generally been recognised that LDCS need support in the field of technology transfer. The UN has seen some imbalances that inhibit proper technology transfer from the DCS to LDCS, and it strongly favours the control of technology and its transfer. It should however be pointed out that despite the UN's recognition of the need to control technology and the terms under which it is acquired, development at the international level is still at the research and proposal stage.

It may be recalled that as early as 1961 the UN General Assembly in resolution 1713(XVI) of 19th December called for a study of the effects of patents on the economies of LDCS.
It also called for:

"a recommendation on the advisability of holding an international conference in order to examine the problems regarding the granting, protection and use of patents taking into consideration the provisions of existing international conventions and the special needs of developing countries, and utilizing the existing machinery of the international Union for the Protection of Industrial Property."50

Since then numerous initiatives have been undertaken towards elaborating international rules prohibiting restrictive business practices especially in the context of agreements for the transfer of technology Programmes have been launched with the UN and its specialized Agencies. Through the UN most work has been done by UNCTAD, United Nations Commission on Commerce and Development (UNCCD), ECOSOC, through the UNIDO and WIPO. Outside the UN some work too has been done by institutions or organisation such as GATT.

The major contribution of the UN and its specialized agencies has been in creating awareness on the plight, and lack of means of LDCS in so far as the question of development is concerned. Against this background the UN has paved the way for its organs and other agencies to critically look at the whole question of technology transfer on fair and equitable terms.

The UN on almost all issues affecting technology and its transfer has sided with the LDCS. This however does
not reflect the UN's commitment to the needs of the LDCS but to the large number of LDCS that are in the UN. This fact is brought out clearly in General Assembly Resolutions 3202, s-VI and 32/188 of 1974 and 1977 respectively where in a programme of Action on the Establishment of a New International Economic Order was declared and the decision to convene a conference with a view of coming up with the adoption of an international code of conduct on transfer of technology were passed respectively. Works on the code within UNCTAD has continued up to date.

It can therefore be argued that the view of the UN are usually the views of LDCS, who swamp the UN, and naturally this has not failed to draw unfavourable comments from DCS who are members of the UN but hold different views from LDCS.

(d) Towards improving relationships in technology transfer

At the instance of the UN General Assembly studies have been undertaken to determine whether national and international regulations are adequate and suited to the transfer of technology to LDCS.

The General Assembly's International Development strategy, Resolution 2.626/XXV, paragraphs 37 and 67 relating to the second United Nation Decade of Development requested that a study be done to establish a new system of international
controls in relation to technology transfer. The request was aimed at finding ways and means of facilitating and adapting of the commercial practices governing the transfer of technology to the requirements of LDGS and to prevent the transferors of technology from abusing their rights.

A number of organizations responded to the request by the Economic and Social Council. As a result, there appeared several documents of interest to the DCS and LDGS—the latter because of the information they revealed which to a large extent was lacking in LDGS.

The documents include, the interim report of UNCCD Secretariat entitled "Restrictive Commercial Practices" dated 1971 and printed in April 1972. Chapter II of the Report restricted itself to specific restrictive practices contained in contracts for the licensing of patents, trademarks and technology. This was followed by a report of the special Group of Experts created pursuant to Resolution 73 (111) of UNCCD entitled Restrictive Commercial Practices from the point of view of Commerce and development.

The Report of the Special Group

The Report of the Special Group contained two sections. The first examined the restrictive commercial practices and
the second contained recommendations undertaken to suppress the
influence the economic
Restrictive practices that
include, inter alia, clauses in

(i) prohibit against challenges by a
validity of the patent
(ii) prohibit the licensee against the utili.
the object of the patent
(iii) restrict exports
(iv) impose royalties after the expiry of the patent, or
in case of know-how beyond the likely period of its
commercial value.
(v) restrict the extent or scope of utilization of
patented articles produced according to a patented
process
(vi) require submission of exports to the prior approval
of the licensor
(vii) restrict the licensee as to the volume of production
(viii) prohibit or limit the use of the technology after the
termination or expiry of the agreement, except in the
event of termination of the contract on account of a
default of the licensee etc.
All the above restrictive clauses by their nature have clear negative or harmful effects on LDCS economies. Consequently the Group recommended that these restrictions should be neither upheld nor imposed unless it could be demonstrated that they involved advantages greater than their harmful effects.

The Group also considered some restrictive practises whose negative effects are less obvious and may be offset by corresponding advantages. In this category the group considered that:

(i) Clauses binding as to the purchase policy, requiring the licensee to purchase raw materials or tools from the licensor or supplier appointed by him might be justified.

It is however our considered opinion that such a clause in relation to LDCS retards adaptation of technology and constitutes a major drain on LDCS foreign exchange earnings.

(ii) Clauses imposing on the licensee of the obligation to acquire other industrial property rights of which only a part interests the licensee, should be avoided. Licensees should only negotiate for the part of the technology in which they are interested in. If it is not done the licensees subject themselves to a risk of paying royalties for the rights which they can not use.

(iii) The clause obligating the licensor to convert the
patents or know-how royalties into share capital is tolerable, but may lead to unpleasant situations. It is conceded the formula may present some advantage by decreasing LDCS needs for foreign exchange with which to pay the royalties. The disadvantage lies in that if the licensor is made to participate in the share capital of the company he may end up acquiring controlling interest in the company. The company may even become a subsidiary of the licensor, which may not be in the interest of a developing country. Experience has shown that conflict do arise in the use of resources. The licensor would probably like to use capital intensive methods to ensure quick and high returns on his investment whereas the LDCS licensee would want to use labour intensive methods as a way of helping to arrest the unemployment problem.

UNIDO and WIPO

The other UN Agencies and Organisations that have produced documents that are of interest to LDCS include UNIDO and WIPO.

The United Nations Industrial Development Organization (UNIDO) has produced many documents including the following:-

(i) Manual on the Establishment of Industrial Joint Venture Agreements in Developing Countries
(ii) Guidelines for the Acquisition of Foreign Technology in Developing countries

(iii) Guidelines for evaluation of transfer of technology Agreements and

(vi) National Approaches to the acquisition of technology.57

The World Intellectual Property Organization (WIPO) on the other hand has also produced documents of interest to the LDCS. These include:

(i) Model Laws for Developing Countries on Inventions,

(ii) Model Law for English Speaking African Countries on Patents and

(iii) The licensing guide for developing countries.58

Most of the work of WIPO has been carried out under its technical assistance programme of the developing countries. This followed a realization that LDCS lack the resources and the manpower with which to confront the industrialized states and multinationals when negotiating for technology transfer.

WIPO's assistance consists mainly of advice, training and the furnishing of documents and equipment.59 In furnishing of documents WIPO has undertaken the preparation of guidelines enumerating the points to be covered by the clauses of contracts involving license rights with respect to industrial property. The guide by WIPO includes draft clauses
and also contains most of the clauses recommended by the Special Expert Group, referred to above.

As regards the Model Laws the activity is based on the assumption that LDCS lack the necessary experts to draft effective patent legislation. Patent legislation demand for a wide knowledge of the operation of the patent system. But Model Law, as the name suggests cannot be applied to any country without first appraising that country's economic and industrial strength.

The Model Law on patents for English Speaking Africa, if adopted would enhance the operation of ARIPO which was established by the Lusaka Diplomatic Conference of December 7, 1976. ARIPO was established with a view to harmonising, developing of industrial property law in the region, and the establishment of common services, such as the examination and granting of patents on behalf of the member states. It is also hoped it is going to facilitate the movement of trade with the English Speaking African countries falling within the East and Central Africa Preferential Trade Area (PTA).

WIPO's efforts are also reflected in its endeavour to have the Paris Convention of 1883 revised to take into account the basic needs of developing countries. We have already seen that the LDCS' interest in the revision of the Paris Convention is to see to it that their proposed Article 5A is adopted in the Convention. DCS are opposed to Article 5A(4)
which seek to regulate mandatory licenses granted for non-use of the patent. We have also seen that LDCS are demanding the working of the invention as a condition precedent to granting a patent.

(ii) **UNCTAD and the International Code of Conduct for the transfer of technology**

In an effort to ensure equitable terms under which LDCS acquire their technology UNCTAD has come up with a number of documents. Notable among the documents are: 62

(a) Guidelines for the study of the transfer of technology to developing countries and

(b) draft international code of conduct on transfer of technology.

The work on the draft began in 1975; within the framework of UNCTAD Secretariat. An intergovernmental group of experts was given the task of preparing the draft. The draft aroused divergent views. As already mentioned the two important points on which the parties could not agree are:

(a) the nature of the code and

(b) the code's scope of application.

The views of the DCS on the code have been already discussed above. The LDCS want the code to be applicable to all technology transfers, whatever their juridical form, whereas DCS would have limited its application to operations
of contractual nature. The other point where the groups are in disagreement is on the question of the legal nature of the code. LDCS want a code that is of universal application and binding on the parties. DCS' views are that the code has to be voluntary.

UNCTAD's efforts in this regard is to provide a forum on which the parties can negotiate and help them arrive at an agreement that takes into account the special interest of developing countries. UNCTAD's stand is shared almost by all the United Nations agencies. 63

(iii) ECOSOC

International efforts to control the activities of multinational corporations began with the Economic and Social Council’s Resolution 1721 of 1972. 64 This was followed by proposals for an international code in the report by the UN Secretariat, entitled "Multinational Corporations in World Development." 65 Both the good and the bad effects of multinational corporations are acknowledged in these texts.

Multinational Corporation (MNCS) are acknowledged to be agents of development. But their effects on host countries are difficult to assess. For this reason the
Commission on Multinational Corporation, a subsidiary of the Economic and Social Council has come up with a number of recommendations aimed at helping countries to understand the MNCS; these include the following recommendations:

(a) notwithstanding the benefits LCDS derive from MNCS operations, the basic aim of the international community is to help increase international public aid to LCDS, to meet the needs of the poorest part of their population

(b) host countries should consider setting up centralized negotiating services or coordinating groups to deal with proposals for investment by MNCS

(c) UN should help host countries in training personnel responsible for negotiating with MNCS

(d) LCDS should include in the agreement with MNCS provisions aimed at reducing the percentage of foreign ownership

(e) LCDS should intensify their efforts in the direction of regional cooperation, especially for the establishment of joint policies with regard to the MNCS.
(iv) Commission on Transnational Corporations

The UN through the Commission on Transnational Corporations at New York is working on the draft aimed at controlling the MNCS restrictive practices which tend to work against the developmental needs of LDCS.

The objective of controlling the MNCS is contained in Resolution 3281 (XXIX) of the UN General Assembly on the programme of Action for the establishment of a New International Economic Order of 12 December, 1974. The Resolution calls for the elimination of MNCS' restrictive commercial practices and measures to induce them to aid the LDCS and handover their technology and administrative knowledge under equitable and favourable conditions.

The code being drafted includes the call on MNCS to adhere to all contractual obligations at both national and international level and should contribute to technological progress. DCS, on the other hand would like to have a code that is voluntary. If UNCTAD does not succeed in moving the DCS from their insistence on voluntary guidelines the inequitable terms which the MNCS are able to exert on LDCS will continue unabated. For this reason people like Mohammed Bedjaoui regard the attempt to control MNCS by ECOSOC as a hopeless task.
While the UN efforts might not be able to produce immediate tangible results, it is at the same time doing a commendable job in bringing to the attention of LDCs the malpractices that MNCS are able to engage in. The awareness achieved, it is hoped, will keep LDCs on guard whenever they encounter the MNCS. 69

The tragedy of LDCs and those in Africa in particular is that despite the disclosure by the UN on the operations and malpractices of the MNCS, they have still found it necessary to provide the MNCS with the necessary legal framework and political climate in which to operate. Given such a situation it is likely that LDCs will find it difficult to control the MNCS.

(v) Vienna Programme of Action

Various activities of the UN and its agencies have culminated in the realization of the need to coordinate the functions of the UN in the fields of science and technology. To realise this important objective, in 1979 the United Nations adopted the Vienna Programme of Action.

The Vienna Programme of Action of 1979, has three major objectives, namely,

(a) to harmonise the extensive, and often overlapping activities of all UN agencies in eight areas of
science and technology

(b) to strengthen developing countries indigenous scientific and technological capabilities; and

(c) to restructure the existing pattern of international, scientific and technological relations. 70

The Vienna Programme of Action calls on LDCS to support each other's effort and emphasizes the need to individually and collectively implement their national plans. The Programme of Action also recognises the role that can be played in this area by the international community through the multilateral organs of the UN system, like helping LDCS formulate science and technology policies and plans.

The Vienna Programme of Action also recognizes the fact that there have been continuing problems in coordinating and financing the work of the UN in science and technology. It therefore proposed the compilation of a directory of major UN science and technology information service as well as a data base on all other UN activities in this field.

(vi) UNFSSTD

Further, under the Vienna Programme the UN Financial System for Science and Technology Development (UNFSSTD) was launched with a view to boosting resources for UN activities in science and technology. So far there have been very
little support from the DCS, and it is unlikely that the 2 billion dollars needed to finance the projects will be raised. To date the fund has only been able to finance 100 projects, out of the more than 900 requested.

It is clear that the success of the coordination efforts envisaged under the Vienna Programme of Action will depend on the cooperation that the UN will be able to receive from the DCS in terms of money with which to implement the various projects it has in mind. It is only hoped that the financial support will be forthcoming without which, UNFSSTD's long term viability would remain uncertain.

(e) Conclusion

From what is discussed above it is clear that in so far as the LDCS continue to use their large numbers in the UN to effect decisions, it is unlikely that a binding agreement can ever be reached. In so far as disagreements on technology and its transfers are concerned the UN is not the best forum to resolve the problems that arise between the LDCS and DCS. The DCS consider the UN as a forum for LDCS who constitute the majority, and therefore the UN does not represent the views of the DCS effectively.

Open dialogue between LDCS and DCS without the camouflage of the UN might perhaps reduce suspicions and
assist in finding a lasting solution. But even in such arrangements individual LDCS are bound to suffer as they lack the negotiating capacity and are therefore not in a position to bargain properly for the technology, they so desperately require.
FOOTNOTES

1. See Brandt Commission Report: North South Dialogue a Programme for Survival 1980; P.4

2. R. Vernon: Storm Over Multinationals. The Real Issues; Supra p. 159

3. For example the Law of Federal Republic of Germany.

4. It should be noted that we are not saying that the conditions and circumstances under which LDCS acquire their technologies are similar, but we are saying that there are enough characteristics in common to make it fruitful on comparative basis to view technology transfer as a colossal problem affecting LDCS worldwide, without of course losing sight of variations within the overall pattern.


6. See R.J. Barnet and R.E. Muller: Global Reach p. 163 Supra; Ecuador, Bolivia, Peru, Chile and Colombia Constitute the Andean countries, and are signatories to the Andean Pact, Cartagena Agreement 1970. see also E.G. Ferris: National political support for Regional Integration: The Andean Pact; International organization 35(1) 1977. p.5

7. See ECA/AUNIDO: Joint Committee on Industrial Coordination of Preferential Trade Area Document INR/PTA/CIC/11/2 (b) July 5, 1983 p. 6

8. The existing institutions where changes are desired include UN, International Monetary Fund (IMF), the World Bank, GATT and the International Finance Company, all of which date back to the 1940s.

9. See UN General Assembly Resolutions 3201 (S-IV) and 3202 (S-IV) of May, 1974.

10. The call included call for changes in (1) trade and commodities (b) money and finance (3) science and technology (4) industrialization and transnational enterprises and (5) food and agriculture; for further details see A.K. Koul: The Legal Framework of UNCTAD, A.W. Sijthoff, Bombay (1977) pp.40-3


14. Ibid p. 3

15. This code should not be confused with the code of conduct on the transfer of technology. For a general discussion of the code see Conrod: The United Nations code of conduct for Transnational Corporations (1977) 18 Harvard Int. L.J. 273 and Samuel Asante: United Nations - International Regulation of Transnational Corporations (1979) 13 Journal of World Trade Law 55.

16. See ECA/UNCTC Report Supra p. 4

17. See Ibid p. 4


19. Ibid p. 581

20. This is the view maintained at all the Proceedings of the Revision of Paris Convention see Doc. PR/DC/3 1979 prepared by WIPO

21. This is evidenced by the call by the UN to revise the Paris Convention, and the call for the adoption of an International Code of Conduct on transfer of Technology Supra note 31.


23. The Organization of Economic Cooperation and Development consists of the following Members; Australia, Austria, Belgium, Canada, Denmark, Finland, France, Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, The Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States.

24. See Council of OECD, 348th Meeting on January 22, 1974 Paris (C (73) 238 (Final) p.1
25. See Ton J. Zuijdijk: "The UNCTAD Code of Conduct" 
Supra p. 584

26. See UNIDO: National Approaches to the Acquisition 
of Technology; United National New York (1977) p. 19

27. Ibid p. 21

28. This is supported by the case study on Livingstone 
Motor Assemblers Limited and Fiat Auto SPA 
 Licensing Agreement despite Italy being a member 
of OECD restrictive terms were able to find their 
way in the agreement.

29. See: Mhamed Sedjaoul: Towards New International 
Economic Order. Holins and Meiler Publishers 
New York (1979) p. 35

30. See Ibid pp. 35-36

31. Refer to the discussion on the Revision of the Paris 
Convention Supra.

32. See statement by Switzerland on behalf of Group B 
Countries on February 28, 1980. Document PR/DC/inf/7 
of the Conference.

33. See WIPO: Document PR/DC/3 contain the basic 
proposals

34. Ibid p. 2

35. Ibid p. 2

36. Ibid p. 3

37. Ibid See section dealing with pledges and objects 
of the revision.

38. See discussion by T.J. Zuijdijk in McGill Law 
Journal Supra p. 561

39. Ibid p. 569

40. Ibid p. 571

41. See R Kovar: "Transfer of know-how and Restrictive 
Commercial Practices Centre for International Study 
on Industrial Property". Strasbourg Document S/11/9 
(1979) p. 60


44. R.J. Barnet and R.E. Muller: Global Reach the Power of the Multinational Corporations Supra p. 162

45. Ibid p. 163

46. Ibid p. 165


49. See Ibid relating to a Report of the second African Regional Meeting on a code of conduct on Transnational Corporations Particularly pages 6 to 9 of the Report

50. See General Assembly Resolution 1713 (XVI) (d) of 19 December, 1961.


52. Many codes have been considered. The latest being Document TD/CODE/TOT/41 of November 4, 1983

53. E.G. See UN General Assembly Resolution 2. 091/XX/ December 20, 1965

54. See UNG.A. Resolution 39/111/May 16, 1972

55. See WIPO: Licensing Guide for developing countries Supra p. 17 for the objective of the request

56. Prepared in March 1973 and Published in 1974


59. See WIPO: General Information Supra at p. 49

60. See Document ECA/WIPO/DC 11 December 9, 1976 containing the Agreement on the Creation of An Industrial Property Organization for English Speaking Africa (ESARIPO) As from December 1985 ESARIPO changed its name to Africa Regional Industrial Property Organization (ARIPO).

61. The basic proposals of the Revision are contained in Document WIPO: PR/DC/3 and PR/DC/4 which are the Conference papers. The Proposals were finalized in 1979.


63. See WIPO view: Licensing Guide for Developing Countries Supra p. 17

64. Full text of the Resolution see ECOSOC Resolution 1721

65. See UN Publication No. E. 73. II A II


67. Ibid Article by A.K. Koul p. 23

68. See Mohammed Bedjaoui: Towards a New International Economic Order Supra p. 40

69. For the divergent views of LDCS and DCS see T.J. Zuijduijk: "The UNCTAD Code of conduct on transfer of Technology". Supra p. 561


71. Ibid - Supra note 71

72. Ibid - Supra note 71
CHAPTER SIX

SUMMARY, CONCLUSION AND PROPOSALS

(a) Summary

This study has attempted to outline and account for Zambia's experiences and responses in relation to technology transfer in the post-independence period; and to make an assessment of whether there exists in Zambia a legal system capable of setting out the rights and obligations of the parties to the agreement and to determine whether on the basis of the legal framework that exists can play a useful role in encouraging the transfer of technology and contribute to economic development.

In Chapter One a background of Zambia's economic development and political setting is given. Basically Zambia's problem is that of under-development, characterized by under utilization of resources like land the division of the country into urban and rural areas. The urban area is relatively developed and the inhabitants enjoy a cash economy and a moderately decent standard of living. The rural areas are backward and the inhabitants are engaged in subsistence farming.

Zambia's extent of underdevelopment is reflected in a number of ways such as, the unemployment among the
youth, lack of technology, finance, equipment, and skills, and the poor standards of living coupled with the lack of adequate medical facilities.¹

During the colonial period the Mining Companies dictated the course and pace of economic development. The role of government was limited to the maintenance of law and order and to establishing laws and taxation policies that gave the mines the latitude and assistance they needed to extract the copper most profitably.²

The benefits of copper development did not spread to the rest of the economy. Worse still the industrial policy of laissez faire pursued by the colonial government, and its failure to develop and expand African Education placed serious restraints upon the pace of Northern Rhodesia Development,³ and when independence came, Zambia was still undeveloped and with no basis for possible industrial diversification.⁴

Diversification of the Zambian economy is based on a process of moving away from the dependence on copper industry to agriculture and manufacturing industry.⁵ Zambia lacks local sources of manufacturing know-how and management to draw upon to ensure a successful implementation of the diversification process, so she has to depend on the acquisition of technology through a process of transfer.
Chapter Two therefore looks at the question of technology, development and monopoly. Technology is defined as a special form of human resource that is applicable to the production of goods and services. Technology is developed mainly by industrialized countries, and Zambia has to acquire the technology through a process of transfer, usually at a considerable expense. Technology transfer is affected by a number of issues including technological, commercial, economic and sometimes even political considerations. These factors tend to militate against smooth transfers of technology.

Chapter Three discusses the legal framework that exists in Zambia. The provisions of the Patent Act are discussed, followed by two case studies of technology transfer in Zambia namely: Livingstone Motor Assemblers Ltd., with FIAT SPA of Italy and the Cooper Zambia Limited, with the Welcome Foundation Limited of UK.

Each of the case studies revealed the weaknesses and advantages of the agreements.

The Livingstone Motor Assemblers Licensing Agreement covers a multiplicity of issues such as the licensing of a patented technology, a "trademark", supply of know-how and technical assistance each of which could have been negotiated.
for in separate licensing agreement.

The licensing agreement between the Livingstone Motor Assemblers Limited and the Fiat Auto Spa creates package imports. LMA is excluded from using any technology other than the licensed technology; it is left with no means of adapting the technology to local conditions. The licensing agreement that LMA entered into in our view merely enhances and perpetuates technological dependence. The agreement lacks vital clauses like terminology clause, which defines the subject of the contract, and hardship clause, which could make a renegotiating of the contract feasible.

The Cooper Zambia Limited Technical Aid agreement relates to transfer of technology through supply of know-how. The agreement is drafted in very general terms and does not mention in specific terms its aims and objectives. The agreement has no time limit; it is perennial and makes Cooper Zambia Limited bonded ad infinitum to the Welcome Foundation Limited.

Cooper Zambia Limited being a wholly owned subsidiary of the transferor, should have been insisted on a license that excluded the payment of royalties to the transferor in that the transferor, shares in the profits of the company.

It is doubtful whether the technical aid agreement between Cooper Zambia Limited and the transferor will lead to technology transfer. What is clear, however, is that
the agreement has succeeded in turning Zambia into a protected market for all the transferor's products.

Chapter Three suggested that the transferees should insist on general clauses like arbitration and hardship clauses in all technology transfer agreement and particularly the transfer under turnkey contracts. Under the turnkey contracts the transferor becomes functus officio as soon as the technology is commissioned and is seen to work. All the post commission problems under the agreement are not the responsibility of the transferor.

Incorporation of general clauses and hardship clauses in an agreement would afford an opportunity to the parties to the contract, to perform that contract. A hardship clauses is a mechanism through which the parties to the contract may request a rearrangement of the initial contract linking them, so that neither of them should be made to bear an unfair burden. Renegotiation could be necessary if, for example, there are permanent changes in the market conditions, such as a permanent threat of change in the exchange rates in which the contractual considerations are expressed, and changes in the method of production and transformation. Changes such as the ones mentioned may cause price changes which could result in the continued existence of a contract being called into question. 10
For a number of LDCS performance of a contract of technology transfer is of prime importance not only for the parties due to their interest at stake and the likely financial benefits that may arise from the arrangement, but also for the States of which the Parties are nationals. States are interested in successful technology transfer because of the beneficial effects technology has on the nation. The benefits include the creation of employment opportunities for the nationals and improvement in the foreign exchange situations, in that once a particular technology has been acquired like the technology relating to the production of fertiliser, it means that the transferee's country would no longer import the goods in questions except to meet the shortfall in production.

From studies done, inclusion of hardships clauses in the agreement is one thing LDCS have not yet learnt to do.\textsuperscript{11}

Chapter Four looked at what has been the Government's reaction to technology transfer. In Zambia transfer of technology is uncoordinated, and is dealt with in a fragmented manner.\textsuperscript{12} A number of factors led Zambia to start venturing into the area of regulating transfer of technology. The major factor is said to have been the effects of the economic reforms on the Zambian economy, and in particular government's failure to negotiate successful
management contracts with the Mines.\textsuperscript{13} Zambia's predicament in relation to the takeover of the mines and other business enterprises was its lack of skilled manpower. Consequently it found itself in a position where it had to rely on the organizational structure of the companies it had taken over, for the provision of specialized and technical services such as the procurement of equipment, processing and marketing of copper.\textsuperscript{14}

Before long the Government realised that mere acquisition of a majority equity interest in enterprises was not going to extricate it from the global influence of Western transnational corporations nor that of the incidents of the old international economic order. The Government realized that unless transfer of ownership is matched by a transfer of crucial managerial powers and the acquisition and mobilization of technical expertise for the purpose of effective management, the control of the Zambian economy will prove largely illusory.\textsuperscript{15}

To curb the abuses and strengthen the negotiating capabilities, the Industrial Development Act of 1977 and the Management Service Board Act of 1981 were enacted.\textsuperscript{16}

In 1986 the Investment Act repealed the Industrial Development Act of 1977. The Investment Act places the
responsibility of registering all agreements pertaining to
technology transfer in the Director of Investments.

Chapter Five looked at the views of developing countries
as a whole and those of the industrialized countries, in so
far as the same relate to technology transfer.

The chapter revealed that there are no institutions at
an international level that are involved in the regulating of
technology transfer. All efforts in the field of technology
transfer at the international level are still at proposal
stage. 17

UNCTAD has come up with a draft International Code on
the transfer of technology.

LDCS want the code to apply to all transnational
transfers of technology and that the code should be binding.
DCS on the other hand prefer a code that is not legally
binding and voluntary. 18

Further through WIPO, LDCS are demanding for a codified
Industrial Property Law, and are calling for the revision of
the Paris Convention to bring it in line with their economic
aspirations. DCS maintain that the Paris Convention should
not be amended, and any amendment is seen as compromising
the usefulness of the Convention. 19

The UN through agencies such as UNIDO, WIPO, UNCTRAL
and UNCTAD assisting LDCS to negotiate for better technology deals. 20

(b) Conclusion

The overall economic policies pursued by the British South Africa Company, and later by the Colonial Government of Northern Rhodesia militated against any meaningful development taking place in Zambia. At independence Zambia was still underdeveloped, making the provision of jobs to the urban dwellers the greatest problem that Zambia had to face.

As a starting point to redressing the problem the Government adopted a policy of supporting selected industries which could make a net contribution to the development and diversification of the economy, with emphasis on labour intensive industries. The most important single reason for the policy of supporting new industries was the realization of Zambia's heavy reliance upon the copper industry.

The diversification of the economy entailed the acquisition of technology and the development of skills for the adoption and the absorption of the technology. In addition to the foregoing the question of the cost of the technology had to be considered.

Technology has been developed mostly by MNCS. It is
therefore unlikely that the MNCS would just let go their technology without demanding a reimbursement of costs incurred in developing the same.

The problem of cost of technology will continue to daunt the LCDS as long as they continue relying on foreign technology. It is hoped that this problem would be avoided by LCDS developing their own technologies.

In Zambia most of the technology is acquired through patent licensing and supply of know-how contracts.

Under the Patent Act, inclusion of restrictive conditions in any patent licensing is prohibited and in situations where the restrictive terms are included in the licensing agreement, such terms are null and void. The Patent Act is therefore a part of the legal framework that exists and if properly utilized can play a useful role in encouraging the technology transfer to flow to Zambia under fair terms and thereby contribute to Zambia's economic development.

In practice however as the case study of the Livingstone Motor Assemblers Licensing Agreement with Fait Auto Spa, shows, the provisions of the Patent Act are always flouted. In Zambia the problem is not therefore the lack of a proper legal system under which technology transfer can take place but rather it is the lack of qualified manpower and of coordination, which hinder the proper negotiation of technology
transfer. It would appear therefore that any effort in Zambia to control technology transfer will remain academic, unless efforts are made to train personnel specifically to deal with the whole question of technology transfer.

Lack of negotiating skills has also been a major constraint in all supply of know-how contracts that Zambia has entered into. The technical aid agreement between the Welcome Foundation Limited and Cooper Zambia Limited demonstrate Zambia's inability to negotiate. Under this technical agreement, Cooper Zambia Limited, being a wholly owned subsidiary of the Welcome Foundation Limited, should not have been allowed to enter into an agreement where it was to pay a fee calculated at one per cent of its annual turnover to the Welcome Foundation Limited, as consideration for the technology transfer and services, in that the transferor company shares in the profit of the company. A royalty-free contract should have been negotiated for. The one per cent share on all annual sales, as a fee for the technology supplied by the transferor should therefore be seen as a further mechanism through which further externalization of funds on top of profits and dividends from Zambia is being perpetuated.

The agreement reflects Zambia's inability to negotiate. Transfer of technology between enterprises from the LDCS and
those from DCS can therefore not be described as an arm's length transaction rooted in the free will of the parties of equal bargaining power. MNCS have superior negotiating skills, knowledge and a more favourable bargaining position.

Looking specifically at the management contracts that Zambia signed with mining companies, considering that Zambia has no skills to depend on, they should have at least included some general clauses in the agreements, in particular hardship clauses and technical expertise clauses. Insisting on a technical expertise clause would appear to be a safety catch to cover up for certain deficiencies in negotiations. The technical expertise clause would also tend to remind the transferor of technology of the basic tenet of technology that good faith and common objectives are fundamental to the agreement. Good faith has to be the basis of such agreement because it would be impossible to expect negotiators from LDCS to negotiate for every eventuality.

Reactions

Zambia's reaction to technology transfer began as early as 1971 with the establishment of the Management Development and Advisory Service. Despite this realization, however, there are still many inherent difficulties that
pertain to the legal framework of transfer. It would appear that in Zambia the question of technology has been looked at from many perspectives. The existence of so many pieces of legislation that relate to technology transfer tend to render support to this contention.

The various laws are uncoordinated and the trend in Zambia has been to enact laws specifically for the problems that present themselves. The laws enacted include the Management Service Board Act.

Management Service Board

The Management Service Board is an independent unit charged with the responsibility of providing impartial advice, research, consultancy and training in priority areas of management.

With the establishment of the Management Service Board, foreign consultants can only be engaged if government is satisfied that the same services are not available locally. It is however not possible to review the consultancy contracts that have been concluded under the auspices of the Board. The Board is reluctant to disclose what it has done and what it is doing in specific details, and this reluctance has made it difficult to review the Board's performance.

From the materials collected through research it is clear
that in Zambia technical services agreements constitute a new form of contractual arrangement between Zambian enterprises and foreign entrepreneurs. Under technical service the transferor of technology is engaged to provide technical services for the execution of a project for specified fees without any proprietary interests whether immediate or ultimate in the production of the enterprise. This to a limited extent helps the government to control the activity of the enterprises.

The establishment of the Management Service Board is a positive indication of the government's desire to regulate the terms under which technology is acquired in Zambia. But it is doubtful whether Zambia will be able to do away completely with the expatriate consultants as the M.S.D. Act envisages within the near future.

In certain sectors of the economy like mining and manufacturing, Zambia lacks local professional managers to man these sectors of the economy. It is likely that for sometime to come Zambia will have to look elsewhere for assistance.

**Industrial Development Act**

The Industrial Development Act like the M.S.D Act, also came as a further government measure to control technology
transfer. The Act in Part 11 provided for the vetting of all technology transfer agreements entered into in Zambia.

Section 16 of the IDA was core to technology transfer. It stipulates conditions that could not be incorporated in any contract of technology transfer. The section, for instance prohibited the parties incorporating into the agreement any form of control over the management of the licensee's enterprise. The section prohibited contracts which provided for the payment of royalties or fees in foreign currencies or outside Zambia except with the approval of the Bank of Zambia.

Section 16 duplicated the provisions of the Patent Act, in particular sections 37 and 49. The Patent Act has not prevented the incorporation of restrictive trade practices in the technology transfer contracts. Consequently the incorporation of similar provisions in the IDA was not going to be of any significance. The solution to the exclusion of restrictive terms in technology transfer lies in Zambia acquiring enough local skilled manpower and the localization of research and development, so that whenever technology is negotiated for and acquired, it would have been negotiated for by the people qualified in the art, and would ensure that it goes through the process of adaptation.

The enactment of the IDA as a measure to Zambia's
desire to regulate the terms and conditions under which technology was acquired was therefore no panacea. The provisions of the IDA could only been translated into practical reality upon the attainment or acquisition of the basic infrastructure in the whole process of technology transfer, namely sufficient skilled manpower. Zambia lacks skilled manpower. All technology transfer activities are uncoordinated. The vetting team at the Ministry of Commerce and Industry does not consist of multidisciplinary staff: it consists of economists only.

Investment Act 1986

As a further reaction to technology transfer among other things, the IDA has been repealed by the Zambia Investment Act of 1986. The task of vetting and registering all transfer of technology agreements has been entrusted to the director of Investments.

The Investment Act does not make any reference to the Patent Office, nor the Management Service Board, implying that the Investment Council will run independently of all other agencies, thereby joining all the other uncoordinated agencies entrusted with the implementation of technology transfer.

At international level Zambia and all the other
developing countries are working towards the adoption of various administrative and legal arrangements aimed at restricting the inclusion of restrictive terms of trade in the contracts pertaining to technology transfer.

As of now all efforts have not produced anything substantial, all the intended actions and legal provision are still at proposal stage. The proposals so far consist of amending the Paris Convention to take into account the special needs of the LDCS, and the proposal for the adoption of an international code of conduct for the transfer to technology. Ancillary to these is the call for the adoption of a code of conduct for transnational corporations and the establishment of an international monitoring institution.

In addition to the activities of the LDCS and DCS, the United Nations and its specialized agencies have recognised the need to support the LDCS in their effort to acquire technology for development. Numerous initiatives and studies have been undertaken toward elaborating international rules prohibiting restrictive practices in the context of agreements for technology transfer. Initiatives include the preparation of model laws pertaining to Patents and Trademarks and the preparation of the licensing guide for developing countries,
under the technical assistance programme of WIPO.

Under UNCTAD a draft code of conduct for transfer of technology has been drafted, and awaits adoption as soon as the legal issues relating to application and the legal nature of the code are resolved.

Under UNIDO a manual on the establishment of industrial joint venture agreements in developing countries has been produced. Other works done by UNIDO include the preparation of guidelines for the acquisition of foreign technology in LDCs and the guidelines for the evaluation of transfer of technology agreements. All activities in the UN in the field of science and technology are coordinated under the Vienna Programme of Action of 1979, with a view of harmonising the extensive and often overlapping activities of all UN agencies in eight areas of science and technology. It is hoped that the UN activities are going to strengthen developing countries' indigenous scientific and technological capabilities, but the final result is likely to depend on the developing countries' willingness to cooperate and to initiate programmes of activities in line with the Vienna Programme of Action of 1979.

(c) Proposals

In Zambia a serious imbalance exists between aspirations
and the performance of the administrative machinery entrusted with the acquisition of technology. The imbalance is reflected mainly through lack of skills, resources and information. Both lack of skills and information on the availability of alternative technologies constitute a major obstacle to national development.

To a large extent the effective utilization of national resources depends upon the adoption of sound economic and social programmes whose success in turn depends upon an effective Public Service.

Technology can be acquired, but if it is uncoordinated can be an impediment to effective exploitation of the technology. It is therefore proposed that in order for technology transfer to have meaning in Zambia certain basic issues have to be resolved. These include:

(a) training

(b) use of bids or tenders

(c) studies and

(d) antitrust regulations and harmonization of laws.

(i) Training

It is common knowledge that the transfer of technology from DCS to LDCS constitutes an unequal match in that enterprises from the LDCS get out-manoeuvred by enterprises
from the DCS into accepting contractual arrangements which are disadvantageous to them.

To overcome this problem, it is proposed that, the permanent answer for DCS would be to train their own manpower to handle all the negotiations.

It is further proposed that for each transfer of technology agreement, Zambia should make it a basic element that such agreements provide for training clauses, under which the transferor in addition to the transfer of technology, should undertake to train the local people from Zambia.

It is our considered opinion that basic training is a prerequisite to proper adaptation of technology, and a well planned training programme is the most effective means of ensuring speedy absorption of foreign technology. Unless training is provided transfer of technology will remain an illusion.

(ii) **Bids**

It is proposed that Zambia should consider the introduction of bids in its process of technology acquisition.

The main advantage of the bids system is that since Zambia lacks the expertise for dealing with negotiation for
finalising the transfer agreements, the bid or tender
would do away with much of the negotiations, and may afford
Zambia an opportunity to look at so many offers and with
expert advise could then pick on the most suitable
technology.

Through tenders it is hoped the high price that Zambia
pays for the technology and which very often bears no
relationship to the actual cost of technology could be
avoided.

Lastly through tenders, the acquisition of technology
could be rationalized. In the context of the Zambia
situation, as a result of duplicity of technology, attempts
to acquire appropriate technology capable of adaptation is
bound to prove fruitless and will fail to boost the demand
for a single product sufficiently to achieve the necessary
economies of scale in the local production of standardized
products.

(iii) Studies

Transfer of technology agreements in Zambia are treated
as confidential. This should not be the case. It makes it
difficult for people to learn from other people's mistakes.
It is therefore recommended that all transfer of technology
should be made accessible.

Further the Ministry of Commerce and Industry, should
work out a mechanism or matrix for a balanced evaluation of
the value of the acquired technology. This analysis or evaluation could be in the form of a socio-economic impact statement, and if possible in quantitative terms the value of technology so far acquired vis-a-vis the attainment of the declared objectives of technology transfer.

Further, in view of the complexities of technology transfer and the great variation in problems arising in different areas of technology, it would be advantageous for the Ministry of Commerce and Industry to initiate studies in specific economic areas particularly those of major concern to Zambia. It could cover such area as energy, agriculture, pharmaceuticals, food processing textiles and mining. This could be facilitated by organising sectoral meetings of parastatal policy makers and the technologists in specific fields. Such meetings would also enable the Ministry to test-check methodologies and instruments which it may develop for the strengthening of the bargaining power of the Zambian enterprises.

The availability of conceptual knowledge and preparation of normative guidelines, would be inadequate for the purpose. It is of extreme importance that these concepts, strategies and guidelines be backed by empirical data.

Indeco and ZIMCO became operational a long time ago,
and most likely have acquired a considerable body of practical experience in matters of technology transfer and development. It is therefore recommended that the Ministry of Commerce and Industry, in conjunction with ZIMCO and INDECO, should undertake the publication of a book of case studies of technology transfer in Zambia. The study should endeavour to show the negotiations as well as implementations based on such experience. Such a publication will of course require the active support of ZIMCO and INDECO. ZIMCO is likely to cooperate in view of the beneficial effects the study is bound to have on the future negotiations of technology transfer. New entrants in negotiations for technology would be able to learn from the mistakes of the enterprises which went into business long before them.

(iv) **Antitrust regulations and harmonization**

Acquisition of patented technology faces a number of impediments. To protect the interest of the transferee, it is recommended that Zambia should, as soon as it is practicable to do so, adopt antitrust regulations in its legal system.

Antitrust regulations constitute measures which Zambia could further adopt against abusive practices in connection
with technology transfer. Antitrust regulations are as the industrialized states show, derived from two sources namely (a) laws governing rights of industrial property like patents and trademarks and (b) laws related to competition as applied to such rights of industrial property.

The importance of the antitrust measures to the industrialized countries is that they combat abuses arising from monopolies, so as to ensure that industrial property contributes to their industrialization programmes. DCS legislation in our view offer an arsenal of significant measures of control which might usefully be transposed into regulations established by the LDCS. Antitrust or competition legislation for Zambia and other LDCS, since they are more general in application and can be used to regulate anything, are in our view an economically more effective and administratively more feasible technique of coping with the problem of restrictive practices than legislation devoted specifically to the patent system.

Lastly since technology is something that affects the developing countries generally, it is recommended that Zambia with her PTA and SADCC Partners should endeavour to adopt a common approach to tackling transfer of technology problem.

As a first step all PTA and SADCC countries it is
recommended should adopt ARIPO Model Laws. ARIPO Model Laws regulate the importation and patenting of foreign technology. Further the model laws aim at limiting the scope of activity of foreign firms, with measures for controlling costs, with patent policy and with the regulation of prohibition of abusive practices.

The adoption of the ARIPO Model Laws will harmonize the Laws in the region. The advantage of harmonized law is that for the PTA and SADC countries, it would reduce the alternatives from which foreign patentees and other foreign transferors of technology are free to choose. Proprietors of technology would also find it difficult to divide and rule among Partner States, and would therefore be expected to work within a bargaining reference more favourable to the interest of the region, as a whole. It is our view that a harmonized system of laws will constitute one front against the adversary.
CHAPTER SIX

FOOTNOTES


2. R.J. Barnet and Muller: *Global Reach, The Power of the Multinational Corporations* (New York, Simon and Schuster 1974) see Chapters 5 and 13


10. The Case of Breakfast Food Zambia Limited and Quackers Limited of UK referred to Chapter is the case in point.

11. See UNIDO: *First Global Study on Capital goods Industry* p. 226

12. Existence of many pieces of legislations all dealing with technology transfer like the Patent Act, the Industrial Development Act etc. have been given as examples of the fragmentation of the process of technology transfer.


15. Look at chapter four above in particular the reasons advanced for enacting the 1977 Industrial Development Act of Zambia.


17. Efforts are currently being made in UNCTAD with a view of coming up with an international code of conduct on transfer of technology—see Document TD/CODEICT/41 of November, 1983.

18. See Chapter 5 above sections dealing with Developing countries and developed Countries' stand, respectively on the revision of the Paris Convention and the UNCTAD Code of conduct on Transfer of technology.

19. Ibid chapter 5 above

20. See for example (1) UNIDO: National Approaches to the Acquisition of technology and (ii) WIPO: Licensing Guide for Developing Countries.
BIBLIOGRAPHY

I-BOOKS


Ladas,


Wilner, and Fikenstecher. Legal problems of codes of conduct for multinational enterprises.

WIPO. Licensing guide for developing countries. Geneva: WIPO, 1977


II-ARTICLES AND PAMPHLETS


Arnold, Hugh M. "Africa and the new international economic order," Third World Quarterly Vol 11 No. 2 (1977)


Bergesen, H.O. "Transfer of technology and the new economic order: aims and intentions of the developing countries and the role of transnational companies," International Politikk (2) 1978


The Courier. Publicayion of Africa-Caribbean-Pacific-European Community. (Published every two months), Nos 72 to 84 (March April 1984)


Foretagen, Ljung. Industrial know-how its creation and transfer. Sweden: Orebro, 1978

Gardner, R. "The transnational corporation and the home country," Colombia Journal of Transnational Law 15 (3) 1976

GATT. The Tokyo round of multilateral trade negotiations. Geneva: GATT, 1979

Girvan, Norman. Preface to Africa Development Vol 11 No.2 (1977)

Kunkuta, M.C.J. New international economic order. (legal analysis.) UNZA Seminar Paper, 1984

Lall, S. "Transfer pricing and developing countries: some problems of investigation," World Development 7(1) 1979


Olson, R.S. "Economic coercion in World politics: with a focus on North-South relation," World Politics 31(4) 1979


Streeten, Paul P. "Development ideas in historical perspective," Economic Impact: A Quarterly Review of World Economics No. 40 1982/4

Tanzania, United Republic of. SADC industrial cooperation. (Memorandum by the Government of the United Republic of Tanzania.) 1984


The strengthening of national training systems and the required international cooperation. (A background paper for the first consultation on the training of industrial manpower.) UNIDO/PC 94, January 1984

Vaitsos, C.V. "The attitudes and role of transnational enterprises in economic integration processes among the LDCS," Millennium 6 (3) 1977-78


III—NEWSPAPER ARTICLES

"CIPEC members cheated, says envoy." (The report shows how developed states suppress prices of Third World raw materials, particularly copper, whilst keeping prices of Developed World finished products high), Times of Zambia, October 15 1983

"Poor nations call for rich's action," Times of Zambia, October 7 1983

"Theories won't make jobs." (Report urging for localised research), Zambia Daily Mail, August 16 1985

"Why debts have short up," Times of Zambia, October 5 1985

"Zambia seeks more aid." (Report indicates K933.5 million to be Zambia's annual debt servicing cost), Times of Zambia, May 22 1984

IV—JUDGEMENTS


V—DOCUMENTS AND REPORTS


ECA. A manpower study mission report by Dr. M.K. Kaniha. (Project RAF/78/036—Manpower development for the basic industries.) Addis Ababa: ECA, 1980


INDECO Limited. Annual reports. (for years from 1970 to 1979.)

International Centre for Public Enterprises in Developing Countries (ICPE) and UNIDO. Report of the international workshop on preparation and negotiation of technology transfer agreements for public enterprises in developing countries. ICP/UNIDO. TDT.4/IW.80/5. Ljubljana: 1980.


. The strengthening of national training systems and the required international cooperation: a background paper for the first consultation on the training of industrial manpower. (Paper was prepared in collaboration with ILO and UNESCO.) UNIDO/pc. 94, 23 January, 1984.


Zambia Parliamentary debates Vol 56 Part II, Hansard 24.3.81 3664 of 1


ZIMCO. Annual reports. (For 1971 and 1975).

Chairman's statement for the period 31 March 1970 to 30 June 1971. Lusaka

VI-SPEECHES

Kaunda, Kenneth David. Blueprint for economic development, (a guide on how to clear obstacles): an address to the 14th session of the UNIP National Council Mulungushi Hall, 1979, Lusaka.


VII-AGREEMENTS

Agreement on the creation of an Industrial Property Organisation for English-Speaking Africa 6-9 December, 1976, Lusaka.

Cartagena Agreement, 1970


Treaty of Rome establishing the EEC.

WIPO. The Paris Convention (Stockholm Act), 1967.

VIII-STATUTES


Italy, Republic of. Civil code decrees concerning Patents 1939.

Tanzania, United Republic of. Patents (Registration ordinance), Chapter 217 of the Tanzanian Laws.


Appendix 1

Case Study 1

licensing Agreement between Livingstone Motor Assemblers
Limited (Licensee)

and

Fiat Auto Spa (Licensor)

The licensing agreement to assemble the Fiat Cars was concluded in 1972. In 1981 the agreement was amended for purposes of enabling the Livingstone Motor Assemblers Limited (LMA) to assemble other vehicles namely Peugeots for Zambia Distributors Limited and Isuzus for Woodgate Motors Limited in addition to Fiats. The main clauses of the Agreement are as follows:

Article 2.3.1 - The licensee during the period of validity of this Agreement shall not import, assemble, manufacture and/or sell motor vehicles or components, parts and assemblies or spare parts of motor vehicles of any other make except that exclusively under "a faco" contract with the Zambian Distributors Limited of Peugeot and Isuzu, the licensee may assemble Peugeot models 504 saloon, and 504 one ton pick-up and one ton pick-up model KB Isuzu, for a maximum aggregate quantity of 2,500 (two thousand five hundred) units per year plus 10% (ten percent) no parts shall be applied by the licensee to vehicles other than the licensed vehicles.

Article 2.6: - The assembly licence and all connected rights granted to the licensee by Fiat under the present Agreement are restricted to the territory.
Article 3 - Fiat undertakes to supply operations sheets to LMA free of charge;

Fiat agrees to send specialized personnel for turning up of the jips and equipment and the starting of the Assembly of any new models introduced.

(1) all costs of up keep in Zambia to be borne by LMA and

(2) the personnel to be paid allowances in the licensees territory calculated and expressed in U.S. dollars subject to review each year in January:-

net of 90% per day for managers
tax or 80% staff 7th category-per day
charge 76% staff lower category-per day

Licensee to reimburse to Fiat the personnel’s gross basic salary for all the period of stay in Zambia by remittances to Italian Bank in Turin.

Licensee to pay all travel expenses of Personnel recalled by Fiat for consultation, including insurance expenses and at end of contract.

In addition K10,000 to cater for differences for personnel working under ZIMCO conditions to be sent to Italy for each employee in U.S. dollars.
PRODUCT QUALITY AND APPROVAL

Article 4.1. - Licensee to use only jigs, assembly equipment and fixtures approved by FIAT.

4.2. - To follow the working cycles, operations sheets and all other instructions supplied by FIAT.

4.3. - To purchase exclusively from FIAT all parts necessary for the assembly of the licensed vehicles as long as said parts are in current production at FIAT works.

Article 4.4. - Licensee may use parts produced locally only when they have been tested and accepted by FIAT according to the procedure and conditions stipulated by FIAT including the sending of samples to be tested by FIAT at the expense of the licensee.

4.5. - Not to make modification of any kind to the parts of the licensed vehicles without previous written consent from FIAT.

PATENTS AND TRADE MARKS

Article 5.1. - Licensee permitted to use the Trade mark Fiat.

5.3. - upon request and at the expense of the Licensee to register in Zambia, keep alive by payment of the yearly fees those patents and/or one or several inventions or designs or patent application concerning licensed vehicles or parts thereof registered by Fiat in Italy and which may be extended to Zambia according to international conventions and keep them alive.
DURATION

Article 8. - Effective for a period of 6 years from June 1981.

TERMINATION

Upon giving notice either Party may terminate the contract and the licensee to surrender the specifications to Fiat Auto Spa.

ARBITRATION

By the international chamber of commerce by one or two people.
Technical Aid Agreement between The Welcome Foundation Limited
and
Cooper Zambia Limited

Section I: Preliminary

1.01 The parent company has extensive experience and manufacturing
techniques relating to the production, packaging and sale of products
referred to in the schedule including similar products and new
products that may arise during the life of the agreement.

1.02 In the course of its business the parent company carries out
research including inter alia, scientific, technical experimental and
investigatory work connected with the products and the subsidiary
which produces and markets the products or some of them in Zambia but
does not have facilities of research, wishes to have benefit of the
knowledge resulting from the research done by the parent company
acquired over many years in its business.

Section II: Dealing in Products

2.01 During life of agreement the subsidiary shall have the
exclusive right to purchase for resale in Zambia the products manu-
factured by the parent company.
2.02. During life of agreement the subsidiary shall have the exclusive right in Zambia to manufacture, pack and distribute such of the products as the subsidiary shall deem it expedient to produce in Zambia - provided that the parent company considers the subsidiary equipped to manufacture, pack and distribute such products.

Section III: Transfer of Technology

3.01 Parent company has already disclosed to the subsidiary certain technical information relative to products which the subsidiary acknowledges and the parent company shall promptly as practicable after the signing of this agreement and thereafter during the life of this agreement disclose to the subsidiary such further technical information in its possession which is material to the products for the time being dealt within Zambia by the subsidiary.

3.03 The parent company should be responsible for the cost of all research undertaken by it.

3.04 The obligation of the parent company to give assistance to the subsidiary by personnel instructions shall be subject to the following limitations.

(i) Instructions at the parent company shall be limited to such number of trainees at such times and of such duration as the parent company can satisfactorily accommodate without unreasonably prejudicing the parent company's operations of its factory or other premises;
(ii) Trainees sent to the parent company's premises must be persons who will be required to use the technology and who will not be able to perform the duties that will devolve on the without such training and who are of standard of education and experience enabling them to take proper advantage of the training;

(iii) The parent company's obligation to send skilled persons to the subsidiary to render assistance at the subsidiary's premises shall be limited to such reasonable number of persons and ranks as to produce minimum interference with the parent company's operations consistent with satisfying the reasonable needs of the subsidiary;

(iv) It shall not extend to the giving of information on the parent company's costs, finance, price mark up, contractual or business arrangements or other operations conducted at the parent company's premises not relevant to the production and marketing of the products in Zambia.

(v) It will not require the parent company to carry out experiments, conduct research, make tests or special designs or samples, draw up specification or supervise the construction or installation of plant or machinery or equipment unless the parent company gives it specific written consent to do so.
3.05 The subsidiary shall during the life of this agreement and continuously thereafter, keep confidential all information disclosed hereunder and will use such information solely for the manufacture, packaging, distribution and sale of the products and will use its best endeavour to ensure that its officers and employees who have access to the information shall keep it confidential.

**Section IV: Improvements**

4.01 The parent company from time to time during the life of this agreement on its being in possession of further information and technical knowledge relating to the products (whether of its own devising or received from other sources or resulting from research) and having confirmed in its judgement that an improvement has been made could usefully be introduced to the subsidiary in Zambia and that such improvement has been successfully reduced to practice in commercial production, disclose to the subsidiary details thereof.

**Section V: Duration**

5.01 The rights and obligations of the parties to this agreement shall notwithstanding its date, be deemed to have commenced on ____________ and shall continue for a period of five years unless determined by either party giving the other one year's notice in writing to that effect terminating on the last day of a financial year of the patent company.
Section VI: Payments

6.01 The subsidiary shall pay to the parent company for its services under this agreement an annual fee equal to one percent of the annual sales of the subsidiary.

6.02 The liability of the subsidiary to pay the fees under shall cease

(i) upon the lawful termination of this agreement under 5.01 or

(ii) if the technology or expertise provided here under becomes public knowledge otherwise than through the fault of the subsidiary.

6.03 If a third party acquires and uses such technology or expertise otherwise than through the fault of the subsidiary the annual fees shall be reduced by a sum agreed between the parties to be reasonable or failing such agreement determined by the Auditors of the parent company to be reasonable sum and in making such determination the Auditors shall act as experts and not arbitrators.

Section VII: Ancillary

7.01 Without prejudice to the generality of the obligations of the parent company to provide the subsidiary with all relevant information.
1) Any technical assistance shall, where necessary include technical personnel as well as full instructions and practical explanations expressed in clear and comprehensive English on the operation of any equipment involved;

i) The parent company shall provide technical assistance in connection with marketing programmes and purchasing of equipment involving the use of such technology or expertise;

ii) The subsidiary shall acquire the right to the continued use of such technology or expertise after the termination of the agreement.

iv) The parent company shall if the subsidiary so requires continue to supply spares and raw materials for a period of up to five years following the termination of the agreement;

v) Subject to the direction of the Minister the subsidiary shall enjoy the benefits and privileges of the most favoured licence.

As WITNESS the hands of the duly authorised representatives of the parties on the day and year first before written.

The Schedule

Human medical/pharmaceutical products; sheep dips, cattle dips, flyspray; disinfectants; detergents, sterilisers; dairy product chemicals; bucket pumps; automatic aero dispenser; drenching
guns; spray races; sprayers; syringe needles; vaccinators; artificial insemination equipment; feed supplements/chemicals; insecticides; restricted sale pharmaceuticals; stock remedies, vaccines and worm remedies.