ORET/MILIEV REVIEW 1994-1999

Assisting developing countries to buy
investment goods and services in the Netherlands

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Preface

The Dutch programme for development-relevant export transactions, the ORET/MILIEV programme, enables developing countries to procure investment goods or services in the Netherlands. These goods should be destined for commercially non-viable projects that enhance employment and economic activity and protect the environment, though exceptions to the commercial non-viability condition can be made for Least Developed Countries and small projects. ORET/MILIEV supported export transactions have to be partially sourced in the Netherlands, which makes them a form of tied aid.

The programme thus simultaneously pursues two objectives: enhancing the business opportunities of Dutch companies on foreign markets and enhancing the economic self-reliance of developing countries. The question of whether these objectives are compatible has given rise to much debate amongst Members of Parliament and such civil-society organisations as NGOs, associations of employers, enterprises and industries as well as scientists.

The Policy and Operations Evaluation Department (IOB) carried out an independent review of the ORET/MILIEV programme over the period 1994-1999 at request of the Dutch Parliament. The review looked into the effectiveness of the programme with regard to development in the recipient countries and the export interests of the Netherlands. The report provides a solid basis for discussion on the future direction of the programme.

The review was carried out by Inspector Frans Makken, in collaboration with Gustaaf de Monie of Policy Research N.V. in Antwerp, Belgium. The fieldwork was conducted in a series of missions during the first half of 1999. IOB is grateful to all who contributed to this review by sharing their knowledge, experience, views and comments. IOB, however, bears sole responsibility for the contents of this report.

Rob D. van den Berg
Director, Policy and Operations Evaluation Department

Policy and Operations Evaluation Department | November 1999

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Abbreviations

A	ABS	Anti-lock Braking System
	AfDB	African Development Bank
C	CIRR	Commercial Interest Reference Rate
D	DESU	Delhi Electric Supply Undertaking
	DFID	Department for International Development, formerly British Overseas Development Agency, ODA
	DOB	Private Sector Department (formerly DEW), Dutch Ministry of Foreign Affairs
	DPT	Diphtheria-Pertussis-Tetanus
E	EU	European Union
	ECA	Export Credit Agency
G	GDP	Gross Domestic Product
	GMP	Good Manufacturing Practice
	GNP	Gross National Product
H	HHPD	Hunan Hydro Power Department
I	IEMP	Integrated Environmental Master Plan
	IMB	Institute of Medical Biology, Kunming, China
	IOB	Policy and Operations Evaluation Department (Netherlands Ministry of Foreign Affairs)
	IPC	Interdepartmental Projects Committee (Dutch Ministries of Foreign and Economic Affairs and Finance)
	IREDA	Indian Renewable Energy Development Agency
L	LCL	Less Concessional Loan
	LDC	Low-Developed Country
	LLDC	Least-Developed Country
	LV	Low-Voltage
M	MILIEV	Environment and Economic Self Reliance
	MOPH	Ministry of Public Health (China)
N	NCM	Netherlands Credit Insurance Company
	NDMC	New Delhi Municipal Committee
	NEI	Netherlands Economic Institute
	NGO	Non-Governmental Organisation
	NIC	Netherlands Procurement Centre

	NIO	Netherlands Investment Bank for Developing Countries
	NLG	Dutch guilder
O	ODA	Official Development Aid
	OECD	Organisation for Economic Cooperation and Development
	OPV	Oral Poliomyelitis Vaccine
	ORET	Export Transactions Relevant to Development
P	PBF	Palestinian Bus Federation
	PBOC	People's Bank of China
R	RBI	Reserve Bank of India
S	SDR	Special Drawing Rights
	SEPA	State Environmental Protection Administration (China)
T	TBC	Tuberculosis
	TNEB	Tamil Nadu Electricity Board
W	WHO	World Health Organisation

Glossary

The Arrangement

A framework for orderly use of officially supported export credits; i.e. encouraging competition among exporters based on price and quality of the goods and services rather than on the most favourable officially supported terms (creating a 'level playing field').

Consensus

The Arrangement is a Gentlemen's Agreement to bring order in export financing, dating from the early 1970s when a consensus on the same was reached among a number of OECD members. Hence, the Arrangement is sometimes referred to as the Consensus.

Consultations Group

The Consultations Group on Tied Aid determines whether projects satisfy the key tests of the Helsinki Package. To limit the administrative burden of the Consultations Group, projects in Least Developed Countries, grants, credits with a concessionality of 80 per cent or more, and projects with a value of less than SDR two million, are exempted from the commercial viability tests.

Guidelines

Officially supported export credits for commercially non-viable projects are subjected to certain limitations, laid down in such guidelines as, inter alia: minimum interest rates and maximum repayment terms.

The Helsinki Package

The participants agreed in 1991 on a package of measures prohibiting tied and partially untied aid for richer, creditworthy developing countries and projects that can be financed commercially. Key tests were developed by which to test projects for their commercial non-viability.

Official support

Government-backed support for export credit *inter alia* in the form of aid financing through grants. Export credit comprises an insurance, guarantee or financing arrangement which allows a foreign buyer of exported goods and/or services to defer payment over a period of time.

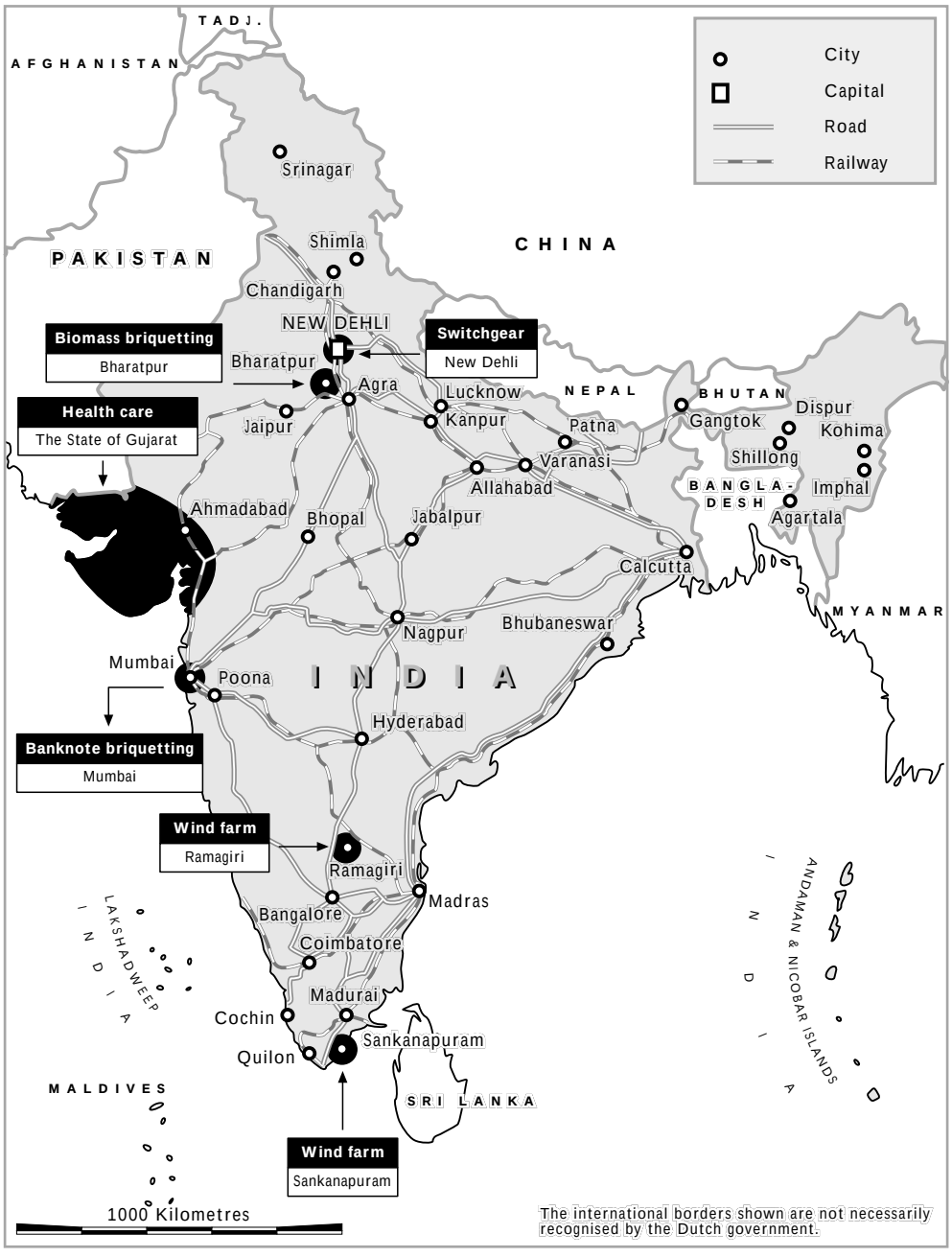
Participants

The Participants to the Arrangement are: Australia, Canada, the European Union (15 member countries), Japan, Korea, Norway, New Zealand, Switzerland and the United States.

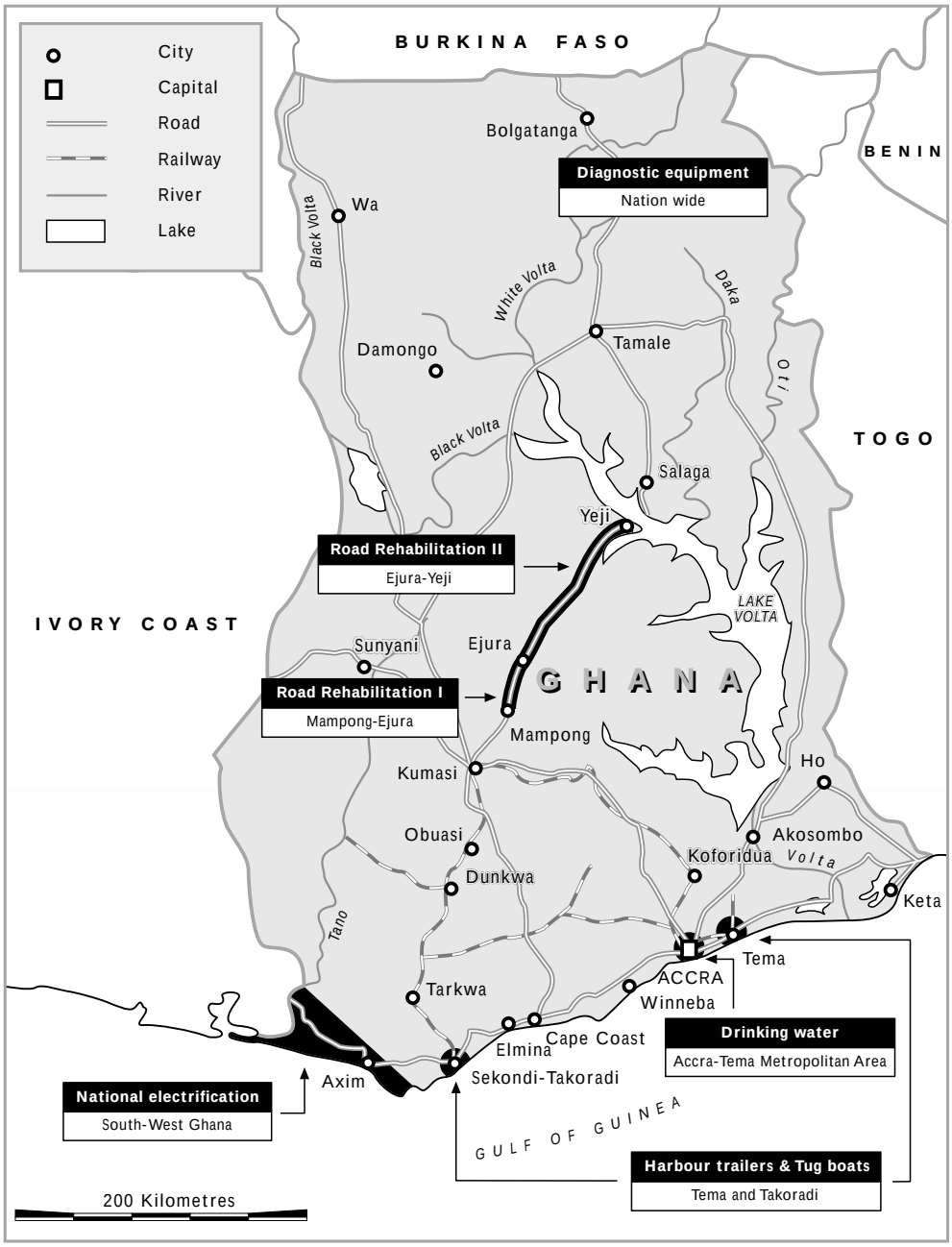
Tied aid

Aid that is tied to the procurement of goods and/or services from the donor country.

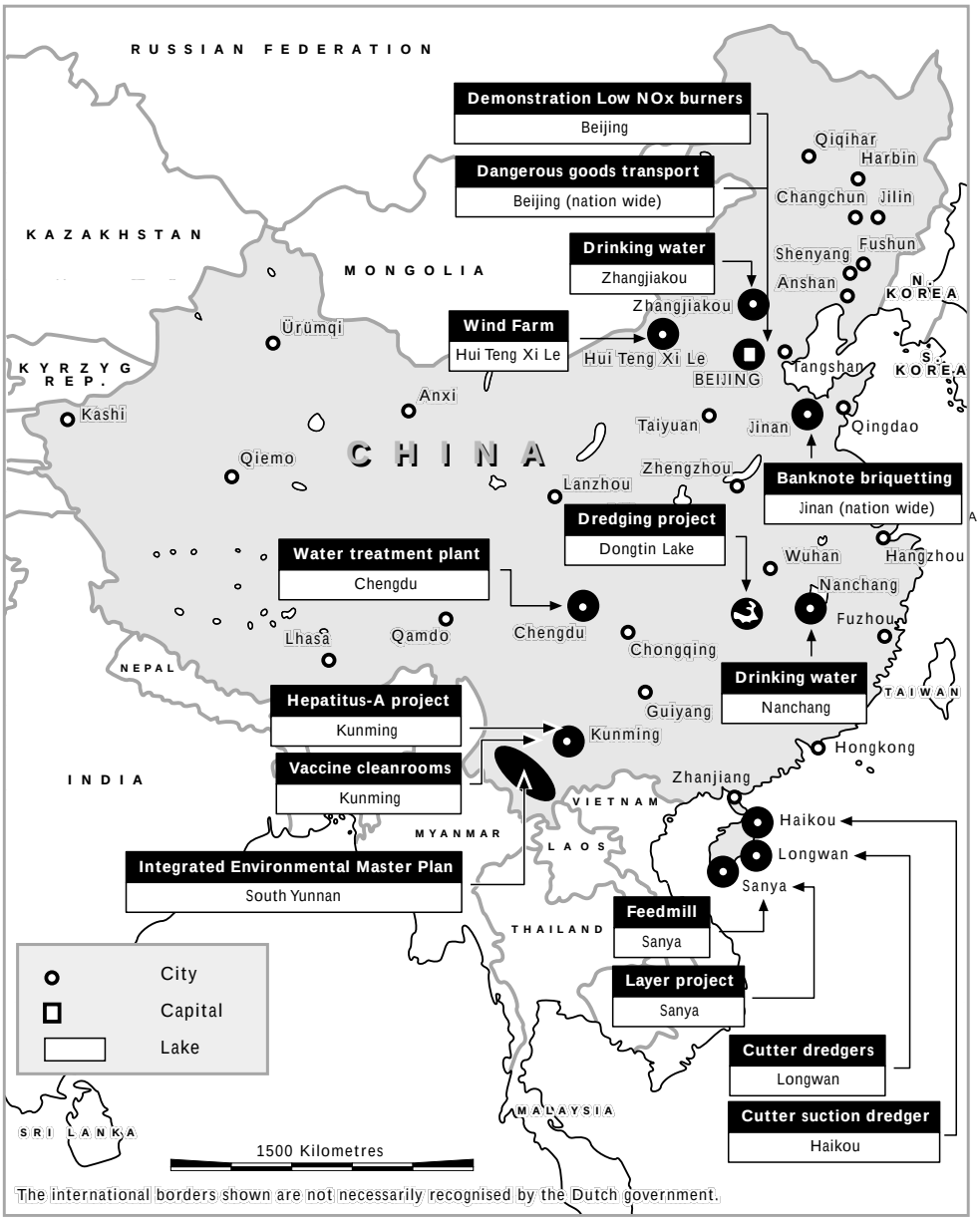
Map 1 India


TADJ.
AFGHANISTAN
PAKISTAN
CHINA
NEPAL
BHUTAN
BANGLA-DESH
MYANMAR
INDIA
SRI LANKA
MALDIVES
LAKSHADWEEP
INDIA
ANDAMAN & NICOBAR ISLANDS
INDIA
City
Capital
Road
Railway
Srinagar
Shimla
Chandigarh
NEW DEHLI
Bharatpur
Agra
Lucknow
Kanpur
Jaipur
Patna
Varanasi
Allahabad
Gangtok
Dispur
Kohima
Shillong
Imphal
Agartala
Ahmadabad
Bhopal
Jabalpur
Calcutta
Nagpur
Bhubaneswar
Mumbai
Poona
Hyderabad
Ramagiri
Madras
Bangalore
Coimbatore
Madurai
Cochin
Quilon
Sankanapuram
Biomass briquetting
Bharatpur
Switchgear
New Dehli
Health care
The State of Gujarat
Banknote briquetting
Mumbai
Wind farm
Ramagiri
Wind farm
Sankanapuram
1000 Kilometres
The international borders shown are not necessarily recognised by the Dutch government.

Map 2 Ghana

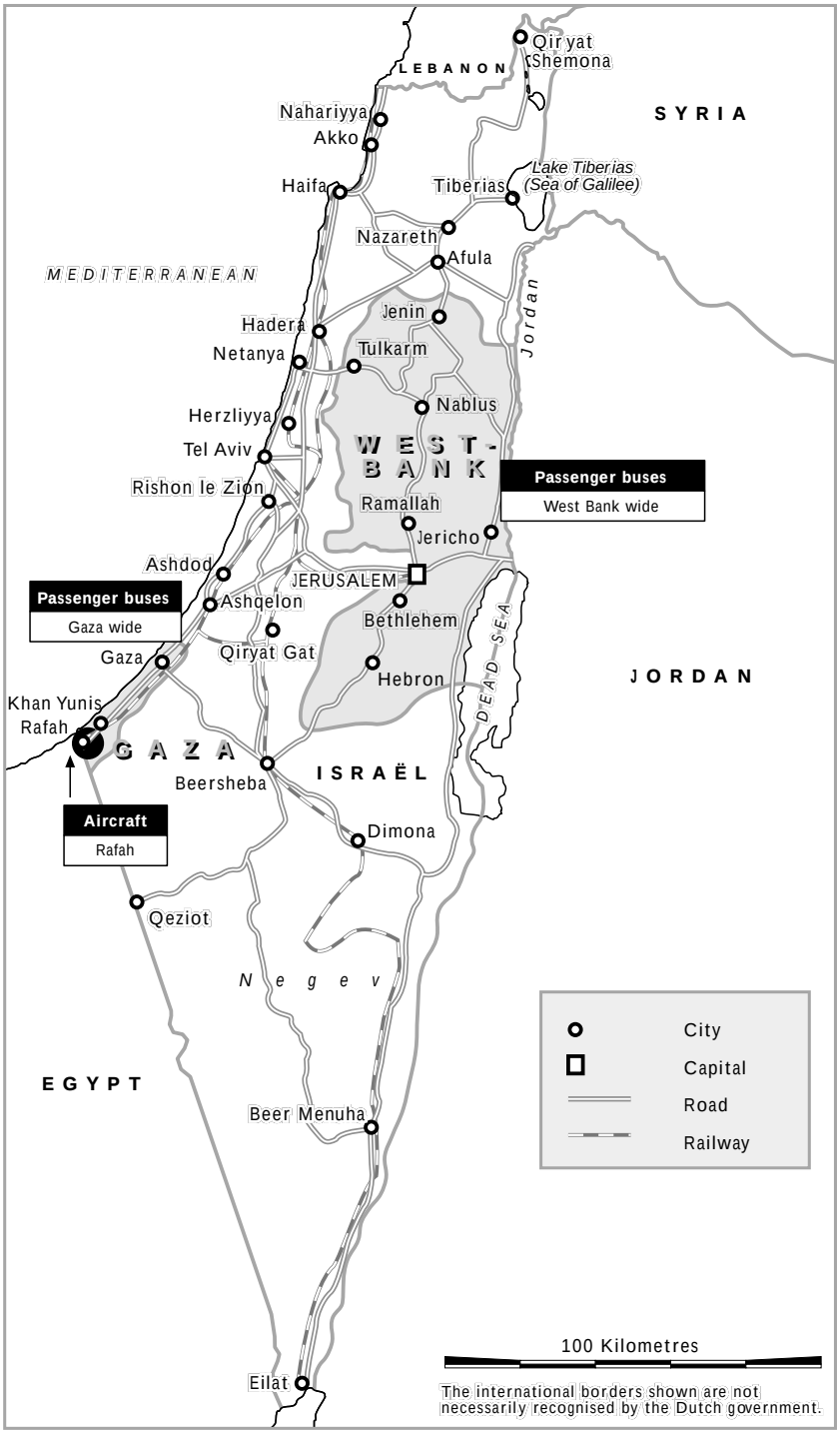

City
Capital
Road
Railway
River
Lake
BURKINA FASO
BENIN
TOGO
IVORY COAST
GHANA
Bolgatanga
Wa
Black Volta
White Volta
Daka
Oti
Tamale
Damongo
Salaga
Yeji
Diagnostic equipment
Nation wide
Road Rehabilitation II
Ejura-Yeji
LAKE VOLTA
Sunyani
Ejura
Road Rehabilitation I
Mampong-Ejura
Mampong
Kumasi
Ho
Obuasi
Akosombo
Koforidua
Volta
Dunkwa
Keta
Tano
Tema
ACCRA
Winneba
Tarkwa
Drinking water
Accra-Tema Metropolitan Area
Cape Coast
Elmina
Sekondi-Takoradi
Axim
National electrification
South-West Ghana
GULF OF GUINEA
Harbour trailers & Tug boats
Tema and Takoradi
200 Kilometres

Map 3 China



The international borders shown are not necessarily recognised by the Dutch government.

Map 4 Palestinian territories



Conclusions

Background

The programme for development-relevant export transactions is known by its Dutch acronym ORET/MILIEV. It is an instrument of the Ministries of Foreign Affairs and Economic Affairs which enables developing countries to buy investment goods or services in the Netherlands for commercially non-viable projects that will enhance employment and economic activity, and protect the environment. The programme is funded from ODA funds and applies to tied aid transactions that adhere to conditions agreed by a group of OECD donor countries, the Consultations Group. The ORET/MILIEV-supported exports of Dutch investment goods or services are *transactions* that are to be part and parcel of a *project*: a coherent set of activities with a development objective in a developing country. The following conditions apply to the programme.

- ORET/MILIEV transactions should be relevant to development in the recipient country. This relevance is considered to be attained when a transaction leads to direct and/or indirect employment opportunities, when it is not detrimental to the poor, women or the environment, and when projects that benefit from the transaction are technically and financially viable; furthermore, MILIEV projects are required to have a positive effect on the environment.
- ORET/MILIEV transactions should be relevant to the Dutch economy. This is the case when at least 60 per cent of the deliverables are sourced in the Netherlands and when chances are created for a longer-term relationship between supplier and recipient country.
- ORET/MILIEV transactions of more than SDR two million should not be commercially feasible, unless they are transactions with Least Developed Countries.

This review has set out to answer the following questions:

- how effective was the ORET/MILIEV programme in terms of development: employment creation, avoiding negative effects on the poor (women) and the environment, and (chances for) technical and financial viability? On the basis of these findings, an assessment is made of the expected wider impact that the project will have on the economy;
- how effective was the programme in terms of realising Dutch export interests: was the

60 per cent condition adhered to and have chances for further orders been created?
- how efficient were the various transactions in terms of price/quality and timeliness?

In connection with the latter, the management of the programme as a whole was reviewed on the basis of fieldwork and desk studies.

The field study covered 30 projects in China, Ghana, India and the Palestinian territories, comprising the following sectors and projects.

Environment:	wind energy, environmentally friendly coal burners, biomass briquetting for fuel, banknote destruction and briquetting to avoid environmentally unfriendly pulping and incineration, environmental master planning, and water treatment.
Public service:	nationwide health projects, improvement of drinking water supply at municipal level, improved rural and urban electricity supply.
Transport:	road construction, dangerous goods trucks, passenger buses, tugs, trailers, dredgers for land protection, and aircraft.
Agro-industry:	feedmill and a unit for production of poultry products.

Due to the time frame available for this review, the following limitations apply.

- The period of review has been restricted to five years: 1994-1999. Projects that have been started and/or finalised in this period may not yet have a measurable impact; hence, assumptions are made with regard to the expected impact (creating conditions for economic development). These assumptions are based on file studies, interviews, site visits and expert views.
- Some elements of the ORET/MILIEV programme have had to remain outside the scope of this review, such as: the role of commercial and investment banks, the number of proposals rejected and the reasons for rejection, the nature and causes of delays in obtaining commercial credits by recipient organisations in developing countries, the actions of other donors with regard to tied aid, and the possible fungibility of deliveries under the programme.

Suggestions for further study and the possibilities for a more in-depth evaluation are given in the main text.

Results

In the review period, from January 1994 to April 1999, some one billion Dutch guilders have been disbursed as export grant to 118 transactions under the ORET/MILIEV programme. The grants have generated an export volume of over two billion guilders, and concerned exports by 63 Dutch suppliers to recipient institutions in 34 countries.

Development relevance

Over the years, the programme has concentrated on investment in three general sectors and on clusters within those sectors, notably: environment (clean energy, sanitation), public services (health, drinking water, energy supply) and transport (land and water). These subjects also feature in regular Dutch development programmes, so that it can be concluded that the programme's conditionality has successfully directed exports to sectors that are important to Dutch development policies. Projects benefiting from ORET/MILIEV-supported transactions have had no adverse effects on the poor, women or on environment. In many cases in fact, effects have been or are expected to be positive in this respect. Likewise, none of the projects were found to be detrimental to the environment, whilst all MILIEV and several ORET projects have had positive environmental effects.

Dutch exporters seeking support from the ORET/MILIEV programme generally look for strong and creditworthy counterparts in eligible countries (in 1998, the ORET/MILIEV country list comprised 107 low- and lower-middle income countries, of which 40 were considered as least developed). Such counterparts are more prevalent in the somewhat better-off low-income countries and lower-middle-income countries, however, than in least-developed countries. This is also reflected in the dispersion of transactions over the various eligible countries: 25 out of 118 transactions were destined for projects in LLDCs, whilst 93 were destined for projects in other low-income countries and lower-middle-income countries. Some recipient public institutions have indicated that they prefer the combination of commercial loans and tied aid grants to full development grants as the former allows them more freedom in planning, design and procurement of technologically advanced hardware.

As could be expected, the condition that 60 per cent or more of the deliverables should be sourced in the Netherlands has on some occasions had an upward effect on prices. Cheaper parts may be available elsewhere, including in the recipient country. In some six

of the 30 cases this was evidently the case, albeit the cheaper alternatives in recipient countries may be of less quality and require more maintenance. The client does not always object to higher prices, which will mostly be more than offset by the grant. In those cases where the 60 per cent condition prevents production of parts in the recipient country, however, the development relevance of the transaction is negatively affected and may impede a gradual transfer of technology and production, e.g. through joint ventures. The 60 per cent condition could obstruct such a gradual transfer.

Development effectiveness

The mainstay of the programme, i.e. capital investments in environmental, public-service and transport sectors, is geared particularly to middle- and longer-term effects on economic development. The projects comprise investments whose objective is to improve the physical, economic and social infrastructure of the recipient countries. Therefore, direct short-term employment effects have been relatively modest: some 1750 permanent and 3600 temporary jobs have been created, whilst longer-term indirect employment effects cannot be calculated in the context of this review. Employment creation, both direct and indirect, is considered to be an important objective of the programme.

Of all projects but one, i.e. biomass briquetting, the immediate objectives have been attained or are likely to be attained. Whether this means that the expected wider effects on the economy will also occur will depend on future institutional, economic and social developments.

Based on the present outlook, the chances for wider effects are positive for such MILIEV projects as wind parks, the environmental masterplan and sanitation projects (water treatment and banknote briquetting). In the case of ORET, the outlook is good with regard to public-service projects for vaccine production, supply of drinking water and energy, as well as most ORET transport projects. The two projects in agro-industry are considered commercially viable and are therefore expected to make their contribution to economic growth. The wider benefits of these projects will take the form of a lasting reduction of coal burning, the provision of energy and clean water to poor sections of the population, economic development through road building, and enhanced access for the poor to vaccination. The ORET water-transport projects have or will have wider effects through protection against damaging floods and storms and the use of land that is reclaimed in the

process. Trucks, tugs and trailers provide relief to economic bottlenecks, whilst the feed and poultry projects substitute for expensive imports from the Chinese mainland. Only the destruction of banknotes seems to be economically neutral, albeit that the eventual recycling of banknote briquettes may create further employment.

Some projects have the potential to generate substantial economic effects; the present outlook on such effects is less firm, however, as some problems (not unusual for developing countries) require attention. Biomass briquetting has difficulty in overcoming teething problems and the Low NOx burners will only have their demonstrative effect when legislation makes their use mandatory. Large nationwide health projects suffer from structural shortages of qualified staff, particularly in the more remote areas. Staff training is underway in Ghana and Gujarat, and it is expected that the new equipment will lure trained people to smaller hospitals and health centres. One drinking-water project in China appears to have been over-designed as the hoped-for economic growth lags behind expectations. The transport projects in the Palestinian territories suffer from sub-optimal use due to the political situation in the area. Some public-service projects suffered from institutional weaknesses during implementation which may have ramifications in the long term, such as the enforcement of fees for drinking water and electricity (Ghana), the maintenance of switchgear (India), and the operation of a water plant (China).

In many cases the projects appeared to be beneficial to the poorer sections of the population, such as all but one of the ORET public-service projects, wind parks, water treatment and road construction. Some public-service projects were particularly geared towards women through attention for reproductive health issues and the availability of clean water. Two projects, roads and aircraft, obviously contribute to air pollution, but these effects are mitigated as the roads allow for shorter routes and the aircraft are stationed well away from urban areas. All MILIEV projects have a positive effect on the environment as well as several ORET transport projects: reducing chances for environmental disasters, and replacing environmentally unfriendly trucks and buses. The commercially viable projects reviewed have scored neutral in terms of poverty alleviation.

The technical and managerial viability of the investments was found to be positive for finalised projects and projects for which substantial deliveries had been made. Financial viability is expected to be attained in one-third of the cases, while another third would be

partially viable. The remaining third will not generate any substantial revenues of its own: many public-service, environmental and infrastructural works, however, are not designed to generate direct income.

Efficiency

Efficiency in terms of timeliness has been rather low. Most projects have experienced delay in appraisal, securing commercial loans, and/or in implementation. Delays in appraisal compare favourably with the often substantial delays in other phases of the process. In most cases, the latter reflect the difficult local environment in the receiving countries. Little has been learned with regard to solving or preventing such problems, as monitoring and evaluation during implementation is not adequate. Many delays during appraisal have been caused by the fact that application forms were not adequately completed by suppliers.

Suppliers face the same problems as many development workers in similar situations. In the projects visited, suppliers have shown remarkable resilience and patience in coping with the various problems, which sometimes drag on for years. In the transport sector, client institutions are often stronger and more confident, working along commercial lines. This, and the fact that transport projects often comprise ready-made or locally-assembled parts, render projects in this sector more efficient. Projects in public services have shown a particularly low level of efficiency, due to the institutional weakness of the client and the supplier's dependence on the completion of civil works by local contractors.

The training and institutional support provided by suppliers is often adequate with regard to such technical issues as operation, maintenance and repair. Given the sometimes huge institutional problems, particularly in public-service institutions, there is little that a supplier can do to remedy structural inefficiencies.

Viability

The technological aspects of deliverables under the ORET/MILIEV programme were such that all recipient entities could be expected to manage the operation and maintenance of investment goods. In several cases, these managerial capabilities of the recipient were successfully enhanced through training programmes. The financial viability of the pro-

jects shows a mixed picture: some 10 projects were considered to be financially viable, whilst a further 12 were able to generate sufficient revenue to cover at least a substantial part of investment and operational costs. The remaining eight projects were not expected to generate any direct income, e.g.: studies, flood protection, free health care, and the destruction of banknotes. Financial viability on the basis of own revenues has not been an objective of all projects, particularly public-service projects, and some infrastructural works are designed predominantly for the common good. This does not mean, however, that the repayment of commercial loans is jeopardised, because all loans were guaranteed by other entities, such as governments and government agencies.

The orientation of the ORET/MILIEV programme to such developmental objectives as improved public services and physical infrastructure yields a range of projects that are not designed to generate direct revenues, nor to offer immediate permanent employment to large groups of people. They are geared rather towards providing social and physical infrastructure at low cost, or at no charge at all, to large groups of people. Raising prices for such facilities to the extent that they become financially viable may even jeopardise development objectives. It was noted that in some cases, prices for public services (drinking water, water treatment, electricity) had actually increased in the past few years to at least partially cover investment and operational costs. In the case of Ghana, fee collection appeared to be problematic.

Wind projects, particularly the first on a site, require substantial investment as the basic infrastructure needs to be set up. The merger of MILIEV and ORET has brought the high concessionality levels of MILIEV in line with those of ORET, at present 35 per cent, and grants can no longer be extended to private companies (as was the case in India). The present projects would not have been feasible under these new conditions.

Export relevance

The ORET/MILIEV programme is relevant to Dutch export interests as its support is tied to transactions that source at least 60 per cent of investment goods and services in the Netherlands. Since components that have a Dutch value added of at least 51 per cent are considered to be fully Dutch, the actual sourcing may be well below 60 per cent. This implies that the export relevance should not be overstated.

Export effectiveness

The programme has been effective in terms of the sourcing of goods and services in the Netherlands, and the ensuing employment effects. Only two projects have not realised the 60 per cent condition, whilst the remainder showed average sourcing in the Netherlands of some 74 per cent. Due to the method of calculation, actual sourcing will have been lower: somewhere between 38 and 74 per cent. Sourcing percentages were generally high for transactions regarding turnkey projects that could be constructed in the Netherlands. At least 1,770 person years of employment have been created in the Netherlands by the 30 projects covered in the field study. The grants extended by the programme enabled Dutch companies to establish themselves on foreign markets or to reenforce their presence in the recipient countries in competition with suppliers enjoying similar advantages.

Export perspectives

Some three-quarters of the suppliers involved expect to realise further transactions as a result, as client satisfaction was generally high. In 21 cases the clients indicated that they considered the quality of the goods and services to be high. In two cases the clients expressed some reservations with regard to the products. The remaining cases are not yet operational and a definitive assessment of client satisfaction could not be made. Moreover, many suppliers have created some form of permanent presence in recipient countries, ranging from local agents to fully staffed service centres and joint ventures.

Some suppliers benefiting from ORET/MILIEV grants are either well-established in a local market and/or have frequently and successfully submitted applications for projects all over the world. In beneficiary countries, sometimes financially strong and (semi-)independent institutions have benefited from ORET/MILIEV grants. If such well-established suppliers and beneficiary organisations were involved in non-commercial projects with an economic or environmental benefit, the provision of a grant was considered justified.

Programme efficiency

The rate of success of the ORET/MILIEV-supported projects can largely be attributed to careful appraisal and to the programme's self-targeting character: suppliers seeking

strong counterparts. The appraisal of transactions has improved substantially over the years. Price checks of deliverables have been adequate, also as a result of elaborate ex-ante price checks. The quality of goods has generally been excellent, as was the service provided by the suppliers. This reflects the supplier's keen interest in developing markets, and has helped to build-up a good reputation of Dutch products and technologies.

Most suppliers entered into direct negotiations with their clients, with the objective of formulating tailor-made projects for submission to the ORET/MILIEV programme. Competition, or the risk that other suppliers will secure similar contacts, has thus been reduced. The direct negotiation approach puts heavy responsibility on the appraising consultants who have to assess the effects and prices of non-uniform and often unique projects. This situation is exacerbated by the fact that only few appraisal missions can be carried out and a virtual lack of feedback from monitoring or evaluation.

The programme's focus on certain (sub)sectors has not brought any improvement in efficiency. Monitoring during implementation is often limited to basic reporting by the supplier and to the securing of a signed certificate of completion. No periodic in-depth monitoring or thorough evaluation is undertaken, which is why no adequate feedback can be provided to the appraising consultant. A derived result of this state of affairs is that consolidation of sectoral knowledge is rendered difficult, particularly with regard to the measurement of economic and environmental effects. Monitoring during implementation is now occasionally carried out by embassy staff.

Ways are constantly being sought by which to shorten the appraisal period. Appraisal, however, has a strong tendency to guide suppliers towards development objectives, to weed out infeasible or unsuitable proposals, and includes thorough price checks. Further attempts to shorten this phase should therefore be considered carefully.

The value of transactions supported by the programme has varied from several hundreds of thousands to almost a hundred million Dutch guilders. With some 100 ongoing projects and commitments, the chance for disbursement fluctuations is large. Insecurities emanate from the uncertain length of the appraisal process, vagaries in obtaining non-grant funding by the recipient, and the frequent occurrence of delays during implementation. These fluctuations have led to the so-called 'stop - go' phenomenon, whereby high disbursement levels have required the ORET/MILIEV window to be closed to new applications.

Issues emanating from the conclusions:

Programme management

The main development objective of the ORET/MILIEV programme is predominantly expressed in terms of direct or indirect employment creation. Direct employment effects are modest as most projects are capital investments that will mainly have effects on the middle or longer term. Little is yet known about the actual magnitude of those effects, as monitoring during and evaluation after implementation is virtually lacking, even in sectors on which the programme has focused over the years.

Similarly, many projects will not generate direct revenues because they are designed for the improvement of public services, infrastructure or the environment. Financial viability in such cases is difficult to attain, and loans for these projects will have to be repaid by government, semi-governmental organisation or parent company. The obtaining of such guarantees is often an uncertain and time-consuming process.

The lion's share of transactions supported by the programme is thus destined for (semi-) public capital investments aiming at longer-term economic and social development and improvement of the environment, rather than for financially viable employment projects. It should be asked whether 'employment creation' should remain an important goal of ORET/MILIEV. Criteria that focus on the development impact of capital investment projects would be more appropriate.

Three out of the four commercially viable projects covered by the review, with a value under SDR two million, were neutral in terms of poverty alleviation. Although no rules have been broken in down-sizing these projects to below SDR two million, the question remains whether such projects need to be funded by ORET. The Netherlands has funded these projects in line with the Consensus stating that such small commercially viable projects are usually either very risky or difficult to fund under market conditions.

The appraisal of proposed transactions has evolved over the years into a comprehensive and systematic process, with effective price checks. The process still suffers, however, from the effects of incomplete application forms, the lack of feedback on the implementation process, and of consolidated knowledge of economic and environmental effects of

projects. Monitoring during implementation is at present nearly absent due to incomplete reporting by the supplier. Such monitoring has to be improved in order to increase the efficiency and timely execution of projects allowing, for example, obstacles to implementation to be identified earlier. Evaluation after the completion of a project should be standard practice for larger projects and in sectors in which ORET/MILIEV is predominantly active. In five to ten years, impact assessments of some of the larger investments may be considered.

Most suppliers have entered into direct negotiation with their clients, with the objective of formulating tailor-made projects for submission to the programme. In this way, it is possible to reduce competition or the risk that other suppliers will secure similar contacts. This approach puts heavy responsibility on the appraising consultants who assess the effects and prices of non-uniform or unique projects. The appraisal of proposals has improved considerably over the years and has contributed to the price efficiency of transactions and the development relevance of projects.

The 'stop - go' phenomenon is not conducive to efficiency of the programme. The reduction in 1999 of concessionality levels to a maximum of 35 per cent (or 50 per cent for LDCs) will reduce the range of projects that could benefit from the programme. The efficiency of the programme will be enhanced if a solution to this problem can be found.

Development

The conditionality of the programme leads to a focus on relatively strong, creditworthy entities in developing countries. Such entities are mostly found in the somewhat better-off eligible low-income countries and lower-middle-income countries, rather than in least developed low-income countries. Conditionality further ensured that ORET/MILIEV-supported transactions could be targeted towards sectors that are also important to Dutch development policies. Nevertheless, it is not tied in to other Dutch development programmes.

(Semi-)public entities often seek ORET/MILIEV support for priority projects for which no full grants can be found, at least not in any foreseeable future, or for which the recipient government wishes to keep full ownership: freedom in planning, design and procurement

of technologically advanced hardware. Some of these recipient organisations, however, show institutional weaknesses that cannot be remedied through training by the supplier.

Exports

The quality of exported goods, related services and training has generally been high, given the noted satisfaction of clients. Service levels have often been improved through some form of permanent presence of the supplier in the recipient country. The combination of presence and quality has a positive effect on export perspectives, albeit chances for further ORET/MILIEV funding are often important to their realisation.

ORET/MILIEV transactions have been effective in terms of creating employment in the Netherlands through the condition that at least 60 per cent of deliverables should be of Dutch origin. The actual sourcing, however, may well be below this percentage as components with a minimum value added of 51 per cent are considered fully Dutch. This method of calculation may not be inconvenient to exporters, many of whom indicated that in this era of globalisation it is often difficult to attain the 60 per cent condition.

The 60 per cent condition occasionally leads to higher prices as the inclusion of cheaper non-Dutch alternatives would render the Dutch share too low. If such cheaper alternatives of acceptable quality are available in the recipient country, this condition is not conducive to development interests. Likewise, it may frustrate a gradual transfer of production to the recipient country.

Summary findings of project clusters

Set-up of the evaluation

The evaluation included in its field studies the main beneficiary countries of the ORET/MILIEV programme: China, Ghana and India, as well as the Palestinian territories, where IOB was undertaking a country evaluation. The most important suppliers have also been covered, both by the field study and questionnaire. The latter inventorised the opinions of the various suppliers on the ORET/MILIEV programme. The field study dealt mainly with assessing development effects, export relevance, and the efficiency of transactions. A desk study included finalised projects not covered by the field study, and concentrated on management issues. The size and coverage of the sample is presented in Table 1.

Table 1. ORET/MILIEV 1994-1999: Coverage by the evaluation

	Number of Transactions	Transaction value (NLG million)	Grant element (NLG million)	Number of suppliers
Total	112	2,085	1,020	63
Field study	30	727	329	24
Desk study	20	192	107	12
Questionnaire				43

Results of the MILIEV projects

MILIEV transactions included in the field study comprised deliveries to projects in energy and sanitation. A study was also made of the development of an environmental master plan. The energy projects all aimed at reducing the effects of coal burning through the generation of wind energy, biomass briquetting and the reduction of NOx emissions of coal-fired plants. Sanitation projects comprised water treatment and the briquetting of used banknotes to avoid the adverse effects of their incineration or pulping.

Development effects

The wind farms (China and India) operate at design capacity and provide clean, renewable energy. They also improve electricity supply in their immediate surroundings, which

are usually rather remote areas, and create modest levels of employment opportunities. Wind technology is well-adapted to local conditions and easily absorbed by local technicians. Successful wind projects have attracted other investors in wind energy to the site. Local production of parts is possible and has been effected on various occasions. However, the condition that 60 per cent of the goods should be sourced in the Netherlands prevented the application of such cost-effective solutions on any meaningful scale. Under the present conditions applying to MILIEV projects, it is doubtful whether wind projects can qualify in future, as concessionality levels have been lowered significantly. Biomass briquetting (India) and burners that lower NOx emissions (China) have considerable environmental potential, but are presently in an experimental stage. The Low-NOx burners will only be accepted when environmental laws enforce rules regarding emissions, whilst the biomass briquetting machines are intended to replace less effective but widely-used and cheaper alternatives.

The development of an environmental masterplan (China) aims at reversing environmental degradation in a populated and polluted lake system. Such master-planning provides an opportunity for the better use of resources, problem spotting, inventorisation and prioritisation in investment planning. Since local authorities already participate in the planning, future chances for reaping the expected environmental and developmental benefits can be considered favourable.

The water treatment plant (China) is nearing its final phase. In view of the levels of river pollution, the many people who depend on the river for sanitation and irrigation, and that fact that well-proven technology will be deployed, it may be anticipated that the project will have positive environmental and developmental effects. Banknote briquetting (China and India) has a positive environmental effect in preventing the use of chemicals or unsuitable incinerators for banknote destruction. Environmental laws in India and China prohibit the practices of banknote pulping and de-inking with chemicals or the use of unsuitable incinerators that emit heavy metals. This caused a stockpiling of used banknotes that had been taken out of circulation. Banknote briquetting machines solved a safety problem as briquettes do not constitute a safety risk. Techniques for the re-use of briquettes, e.g. in board production, are actively being pursued.

Export relevance

The export relevance of projects is generally positive. All projects have attained or are

expected to attain the objective that at least 60 per cent of goods or services be sourced in the Netherlands. The quality of deliverables was excellent. The biomass briquetting machines have balancing problems, however, and moving parts need regular recoating. Users of the machines are confident that these problems will be mastered in the near future. The employment generated by the transactions in the Netherlands is rather limited, with some five to 20 person-years per project; the exception is the banknote briquetting machines which have generated several hundreds of person years of employment. Other than the experimental projects, low-NOx burners and the biomass briquetting machines, chances for further deliveries at present vary from reasonable to good.

Efficiency

Apart from the banknote briquetting machines, MILIEV projects have shown low levels of efficiency in terms of time as many delays occurred. Problems included, for example: cumbersome appraisals leading to extensive and time-consuming correspondence, problems in acquiring commercial funding, design problems, difficulties in securing a site for the project, slow delivery of local materials and late termination of civil works, dependence on bureaucratic procedures for release of data, permits, etc. Prices paid were reasonable, although some suppliers had to adjust their prices or profit margins after price checks during appraisal.

Results of oret public-service projects

The public-service transactions comprise deliveries to projects in health, drinking water and energy supply. The health projects aim at equipping hospitals, mainly at the intermediate level, and the production of vaccines. Water projects are situated in urban areas where water supply either could not keep pace with population growth and/or where the extraction of groundwater had become problematic. Energy projects included one rural and one urban electricity supply project.

Development effects

The health-care projects (Ghana, India) are improving service delivery in remote areas by equipping primary and secondary health facilities. Health care is thus brought closer to the rural poor, and in principle both rural and urban poor have free access to the facilities. A general problem is staffing the facilities in remote areas. At present, some of the

delivered equipment is not used to capacity as trained staff is not always available. Projects include a staff training component, but this is mostly insufficient in the face of the vast scale of the problem. The vaccine production projects (China) are about to become operational, and are expected to be effective in substituting expensive imports by local vaccines, thereby reaching a large number of people through the supply of low-priced vaccines for common diseases. The general economic gain of health projects is expressed in terms of more years of active life, particularly for the poor and for women who are specifically targeted, e.g. through the supply of ultra-sound equipment.

Water supply projects (China, Ghana) are effective in improving the supply of clean water to large parts of urban populations, particularly in peripheral areas where water pressure is often low and supply irregular or completely lacking. All drinking water projects visited had been completed and were functioning well, albeit that institutional structures appeared to be weak in two instances. (Technical) training by the suppliers would not have reversed such a situation on its own. One station was not used to capacity as the expected economic growth and related demand for water lagged behind expectations.

The rural electrification project (Ghana) is effective, although benefits are not evenly dispersed over the target area. The provision of house connections is erratic and some villages have resorted to illegal connections. The development relevance of the urban electricity supply project (India) was difficult to establish as no clear direct developmental effects could be discerned. As in the case of drinking water, recipient institutions appeared rather weak and the measure of training provided by the supplier could not have remedied this on its own.

Export relevance

All but one of the public-service projects have attained the condition that 60 per cent of the deliverables be sourced in the Netherlands. An estimated 750 person years have been generated in the Netherlands by the transactions. Clients were satisfied with the quality of the goods and services delivered for public investment. Apart from the energy projects, chances for further deliveries are positive and three suppliers have actually obtained new contracts. Wind projects have benefited from high levels of concessionality under the MILIEV programme; this is no longer possible now that the lower level of ORET concessionality applies to MILIEV.

Efficiency

Most projects have suffered delays in appraisal, securing commercial loans and/or implementation. Some delays have been substantial, as several projects were approved back in 1992 and 1993 and some are still ongoing. The delays particularly reflect the often difficult interaction with recipient public institutions. The suppliers have shown tenacity and flexibility in getting the projects through against substantial adverse odds. In some cases, suppliers have provided more services than they were actually obliged to do under the contractual arrangements. One particularly complicated health project (India) benefited from an appraisal mission. Prices and quality of the goods and services were good, but adjustments during appraisal have been necessary on several occasions.

Results of ORET infrastructural projects

ORET-supported deliveries for the development of infrastructure were for land transport, water works, water transport, and air transport. Land transport projects included road construction and the delivery of trucks and buses. The 'wet' infrastructure projects comprised dredging and port improvement. For air transport, second-hand airplanes were provided for the setting-up of an airline company.

Development effects

The development effects of road construction (Ghana) are positive as access to an area with agricultural potential is being improved, as well as connections between sea ports and their hinterland. The delivery of passenger buses (Palestinian territories) has relieved existing bottlenecks, but travel restrictions imposed by the prevailing political situation limits their earning potential. The trucks delivered for the transport of dangerous goods (China) are effective in preventing human or ecological disasters in the event of accidents. The budget only allowed for trucks, however, and locally-acquired trailers remain of a lesser standard. This reduces the safety potential of the special trucks. The project is commercially feasible.

The dredging projects (China) have, or are expected to have, positive economic effects. In one case the project was found to be commercially feasible as it was situated in an upmarket residential area. The projects all have important environmental effects, since they are designed to mitigate the effects from natural disasters such as floods and typhoons.

The technological skills required for carrying-out dredging projects and operating the dredgers are sufficiently present among the recipients. The port improvement projects (Ghana) included the delivery of tugs and trailers, which effectively relieved existing bottlenecks by coping with the substantially increased throughput in the ports. The tugs also reduced the chances of accidents with ships, particularly with high-risk ships such as tankers manoeuvring in the ports.

Two aircraft (Palestinian territories) were delivered to support the Palestinian Authority in establishing its own airline company. The project is a-typical for the ORET programme as the concessionality was 81 per cent and hence it qualified as an aid project. The planes provide employment and fly throughout the region, with a passenger load of approx. 60 per cent. The political situation in the region restricts their optimal use.

Export relevance

In all but one case, the condition that 60 per cent of the goods and services be sourced in the Netherlands has been adhered to. The infrastructural projects have generated an estimated 640 person years of employment in the Netherlands. In most cases, the chances for further deliveries are positive as clients have expressed their satisfaction with the quality of the deliverables. The suppliers of tugs and dredgers are well-established in the various markets and are virtually assured of further orders. The road constructor and the supplier of trailers have made earlier deliveries to the country and are confident that more may follow. The supplier of passenger buses has negotiated a new contract and the technical support package negotiated in connection with the delivery of planes will be renewed. There is further need for dangerous goods trucks and appropriate trailers, but their ordering will probably depend on whether there are possibilities to obtain grants.

Efficiency

The implementation of infrastructural projects is generally fair as compared, for example, to public-service projects. Only in two cases, a dredging project and the delivery of trailers, was efficiency low. The main reason for the better scores is twofold. On the one hand, counterpart institutions in transport appear to be strong and confident as they mostly operate on the basis of commercial principles. On the other hand, deliveries to transport projects often involve capital goods that are completely or partially built in the

Netherlands, or assembled on site, and are delivered as a whole package on a turnkey basis. There is thus no dependence on civil works to be carried out by local companies or long installation or construction periods on the project site. Prices of deliverables have been fair.

Results of ORET agro-industrial projects

Two agro-industrial projects under the ORET programme were included in the field visits: a chicken layer project and a feedmill, both in China.

Development effects

Both the chicken project and the feedmill have an important economic potential, as their produce will fill a demand gap on an island and substitute for expensive imports from the mainland. The gap results from booming tourism, which has boosted the demand for chicken products, meat and shrimps. The projects are commercially feasible. They are located in a relatively poor area, but their employment effects are extremely modest, particularly for the poor indigenous population.

Export relevance

The level of Dutch sourcing was high, 95 and 79 per cent respectively, and some 40 man years of employment were generated in the Netherlands. Considering the need for more chicken farms and feedmills, and the fact that the suppliers are well introduced into the local market, the chances for further deliveries are positive. Before placing more orders, however, the Chinese clients attach great significance to the potential of obtaining grants.

Efficiency

The efficiency of both projects was extremely low. Severe problems during appraisal and implementation (electricity supply and finances) have delayed the projects by several years, and they are yet to become operational.

Financial viability

In the initial appraisals, 14 out of 30 projects were assumed to be financially viable (ability to pay investment and operational costs from direct revenues). The probable viability of these projects, or the conditions that will have to be met to attain longer term financial sustainability, have been reconfirmed during the site visits. For the other 16 projects, financial viability was not assured unless the services were to be paid for by the users or applicable rates were to be increased significantly. This could have the effect of substantially reducing or even nullifying the development objectives of these projects. Moreover, some projects have deliverables for which no charge can be levied (e.g. an environmental masterplan study). Hence, for financially non-viable projects, financial sustainability had to be guaranteed by the relevant authorities in the recipient country through firm commitments: either that they would absorb predictable cash shortfalls, or that prices will be sufficiently increased to repay the loan without jeopardising the initial development objectives.

Programme Management

The appraisal period is perceived by some suppliers as very lengthy and obscure. Over the years, the period set for appraisal has been targeted at four months. In practice, this time limit is difficult to meet as many applications are not fully completed at the time of their submission, and many complicated and unique projects have to be appraised through correspondence with the client. Most projects are appraised in a period of five to six months, however; only some problematic cases take much longer. Appraisal, including effective price checks, is particularly important in view of the fact that most suppliers obtain their contracts through direct negotiation rather than through international competitive bidding procedures. Such direct negotiations usually yield tailor-made projects for which there is little competition. This approach improves the chance that preparation costs will be earned back, but it complicates the appraisal, particularly for projects with unique features.

The average period required by the client to secure a commercial loan is three times longer than the time taken for appraisal. Implementation periods vary strongly from several months for turnkey projects to many years, e.g. if civil works have to be carried out by the client or when special permits are required.

Reporting by suppliers is one of the very few ways existing by which implementation of the projects can be monitored. The field and desk studies revealed that for almost half the investigated projects, progress reports were inadequate, irregular or even lacking. Occasionally, embassy staff will look at projects if asked to do so, but they do not play a formal role in this respect. The absence of any formal monitoring contrasts with the thoroughness of the appraisal.

The ORET/MILIEV project cycle is characterised by many uncertainties, as various steps in the process depend on exogenous forces. The planning of disbursements is therefore difficult. If the approval of many deliveries coincides with high levels of disbursement, the resources of the programme will be stretched to such an extent that new applications cannot be accepted. The risk of overspending or underspending is particularly large if the size of a single project, among perhaps a hundred in all, takes up a predominant portion of the total annual budget.

XL

1 Design and scope of the study

1.1 Background

The programme for development-relevant export transactions is known by its Dutch acronym ORET (Ontwikkelingsrelevante Exporttransacties). It is an instrument of the Ministry of Foreign Affairs and the Ministry of Economic Affairs which enables developing countries to buy investment goods or services in the Netherlands for commercially non-viable projects that will enhance employment.[1] Such projects usually depend on government support for their financing. The Dutch government, i.e. the Ministry of Foreign Affairs in coordination with the Ministry of Economic Affairs, provides a grant to the government of the importing country to cover part of the transaction costs. By accepting the grant, the recipient has to guarantee funding of the remaining costs. In 1993 a similar programme was established, but specifically geared to environmental improvements in the recipient country. Grants provided under this programme, known by its Dutch acronym MILIEV (Milieu en Economische Verzelfstandiging), were usually larger than in the case of ORET. Moreover, private companies in developing countries could be direct recipients, i.e. with only indirect involvement of their government. In 1998 the ORET and MILIEV programme funds were joined, since when ORETconditionalities apply to both programmes. The programme is now known as ORET/MILIEV (or: 'ORMIL') since the supported transactions are still separately administered.

ORET/MILIEV-supported transactions are a form of tied aid: the Dutch Ministry of Economic Affairs has stipulated that at least 60 per cent of the value of the goods or services has to be of Dutch origin, whilst service contracts should source at least 40 per cent in the Netherlands. Such government support to developing countries can lead to unfair competition on export markets if other suppliers have difficulty in arranging the same level of government support (absence of a 'level playing field'). If markets in buying countries are dominated by transactions that are subsidised by one or other exporting or 'donor' country, one speaks of a spoiled market.

To mitigate the effects of such unfair competition, and to gradually reduce the levels of government support to exports, several OECD member states took the initiative of agree-

1 *Within the European Union, the Netherlands occupies a modest position with regard to state aid to the manufacturing sector. According to figures of the European Commission, the Netherlands took 13th position among the 15 member states in terms of aid as a percentage of value added: some 1.5 per cent. Greece and Italy head the list with over five per cent; Britain and Sweden, with approx. one per cent, provide least of all* (Economist, 12 April 1999).

ing on levels of concessionality. In 1974 this culminated in the Arrangement on Guidelines for Officially Supported Export Credits (the Consensus). Participants meet regularly in Paris. Over the years, the number of participants in the Consensus have increased considerably, but it has never acquired formal status: it is still a Gentlemen's Agreement among OECD member states. The members adhere well to the conditions of the Consensus in that they notify all export grant proposals to the participants for scrutiny. The conditionalities have changed and matured over the years; the conditionality 'package' that was valid for most of the 1990s is known as the 'Helsinki Package' (see chapter 2.2 for details). As a result of a European Council Decision, this package was made obligatory for EU member states in 1992.

ORET/MILIEV funds are managed by the Dutch Ministry of Foreign Affairs, which provides the funds from its budget (ODA). During the last five years, about one billion guilders have been disbursed (NLG 737 million) and committed (NLG 283 million) to ongoing projects, generating exports with a transaction value of about NLG 2 billion. This comes to an average of NLG 200 million (or NLG 147 million on disbursement basis) per year and an average concessionality level of 50 per cent. Proposals for concessional export transactions are appraised by the Interdepartmental Projects Committee, chaired by the Ministry of Economic Affairs. Members of this committee, apart from the Ministry of Economic Affairs, include: the Ministries of Foreign Affairs and Finance, the Netherlands Investment Bank for Developing Countries (NIO), and the Netherlands Credit Insurance Company (NCM).

ORET- and MILIEV-supported transactions comprise the export of capital goods or services that are subject to the following conditions:

- ORET-supported transactions should be relevant to the Dutch economy, hence the above-mentioned 60 per cent norm (40 per cent for service contracts), and should create (in)direct employment in the recipient country, with no adverse effects for the poor, women or the environment;
- MILIEV supported transactions should also be relevant to the Dutch economy as well as to the environment and economic development in the recipient country, with no adverse effects on the poor or women.

All ORET/MILIEV transactions must be notified to participants of the Consensus in Paris,

but transactions with a value under SDR two million (NLG 5.4 million) require no screening for commercial viability.

Tied aid transactions have provided much cause for academic and political discussion. Opponents question whether aid that is tied to procurement in the donor country can be an effective and efficient means of development in the recipient country; they expect export interests to take the upper hand. On the other hand, supporters argue that export and development interests can be combined to the mutual benefit of supplier and client. From the start, the export support programmes have been subjected to criticism from various Members of Parliament, Ministers for Development Cooperation and pressure groups in the Netherlands. Several Members of Parliament stressed the need for an evaluation of the ORETprogramme in order to establish the presence or absence of a catalytic effect on development through officially supported exports of capital goods. Some considered such effects evident while others had severe doubts. Parliament insisted on an evaluation of all instruments of the Private Sector Department (DOB) of the Ministry of Foreign Affairs. In 1998, the Minister for Development Cooperation promised Parliament that he would ask IOB to evaluate the ORET/MILIEV programme, as other instruments had recently been either created or evaluated (Tweede Kamer der Staten Generaal, Verslag van een algemeen overleg, 25 600, nr. 83).

1.2 Objective and main questions of the study

The general objective of the ORET/MILIEV evaluation is to assess the programme's effectiveness and efficiency in mobilising Dutch exports for projects in developing countries which aim at the creation of direct or indirect employment (ORET) and the improvement of environmental conditions (MILIEV).

More specifically, the evaluation will assess:

- the efficiency of processing of requests for co-funding of export transactions at *transaction* level;
- the effectiveness and viability of transactions with regard to programme objectives and conditions at *project* level;
- the efficiency of management and procedures at the *programme* level.

An ORET/MILIEV-funded *transaction* comprises the export of Dutch capital goods or services to a project in an eligible developing country (a list of eligible countries is regularly pub-

lished by OECD, but the Ministries of Foreign Affairs and Economic Affairs together draw up a list of countries eligible for Dutch tied aid). A *project* comprises a set of activities with a development objective in an eligible country, usually managed by a public or semi-public institution, or an entity within the recipient institution. Exported goods or services should constitute a vital component of the project. Up to January 1998, MILIEV-supported exports could also be delivered to private entities. The *programme* concerns the Dutch ORET/MILIEV programme comprising all transactions that are supported by ORET/MILIEV funds.

Parliament had indicated that it would appreciate an early reply to its questions regarding the ORET/MILIEV programme. In order to provide reliable information at the shortest possible notice, IOB has considered only the last five years of the programme, from 1994 to 1999, whilst the fieldwork was concentrated on finalised transactions in the main recipient countries: China, Ghana and India. Since IOB was simultaneously reviewing Dutch aid to the Palestinian territories, ORET projects in these areas were also included. Finalised projects in other countries were subjected to a desk study regarding management issues; hence, all finalised projects have been covered either by field or desk studies. In the countries selected for field visits, ongoing projects were visited provided that they were close to the site of a finalised project. The desk and fieldwork regarding finalised and ongoing projects covers the main categories of transactions supported by the programme: public services, infrastructure, and agro-industry.

1.3 Limitations of the study

The study suffers a number of limitations in terms of scope and depth, emanating from the time constraint. A first limitation follows from the limited period of review: 1994-1999. Projects started and/or finalised in this period may not yet have a measurable impact; hence, assumptions have to be made regarding whether the expected impact will indeed occur. Impact pertains particularly to the wider longer-term effects (creating conditions for economic development or improvement of environmental conditions) of projects that benefited from ORET/MILIEV-supported transactions. These assumptions are based on files, interviews, site visits and expert views, which are reflected in the case descriptions in the evaluative chapters. Some short-term effects, such as direct employment, the (absence of negative) effects on poverty, women and environment and (chances for) technical and managerial sustainability, can be assessed with more certainty.

Some aspects of the ORET/MILIEV programme have not been subjected to study, in the expectation that their relevance to the main evaluation questions was not crucial. These elements are briefly elaborated below:

- the NIO, commercial banks and the NCM play an important facilitating role in the ORET/MILIEV project cycle, no special in-depth study of these institutions has been undertaken;
- projects that have been rejected by either the Private Sector Department, the Interdepartmental Project Committee, or the participants to the Consensus in Paris, have not been studied;
- the securing of commercial credits appears to be a rather lengthy affair once a proposal has been approved and a grant has been proffered to the recipient government. No special study has been undertaken into the nature and causes of this phenomenon;
- the actual and expected benefits of the projects were calculated on a 'before and after' basis; scenarios which would enable a 'with/without' calculation were not developed;
- the question whether competing countries have (occasionally) granted levels of concessionality other than that agreed by the participants could not be covered within the time frame of this study;
- since actions of other donors have remained outside the scope of this study, matters regarding fungibility have also not been addressed. Fungibility of a transaction indicates that it would also have been realised in the absence of Dutch funding, e.g. from suppliers in other donor countries with grant support from their government, or countries where production costs are low. Despite their tailor-made character, it may be assumed that many ORET/MILIEV-supported transactions are fungible. Since ORET/MILIEV is also geared to the promotion of Dutch exports, possible fungibility of the transaction in recipient countries has not played a role in appraisals and was therefore left outside the scope of this review.

These elements may merit further in-depth study in future in order to improve the effectiveness of the programme.

1.4 Approach

ORET and MILIEV projects listed for the period January 1994-April 1999 include 48 finalised projects, 70 ongoing projects and 19 projects for which funds have been committed, but

which have not reached the implementation stage. For the purpose of this evaluation, these commitments are left out of consideration. Finalised and ongoing projects can be categorised in three ways:

- ORET and MILIEV projects: until January 1998, different conditions in terms of conditionality and recipient institutions applied to the two categories. Since that date, MILIEV projects are still indicated separately although they are subject to the same conditions as ORET projects;
- projects larger or smaller than SDR two million;
- subject-matter headings for all MILIEV and ORET projects:
  MILIEV: Public Services (sanitation, energy, studies/plans, dredging/shore protection) and Agriculture;
  ORET: Public Services (health, sanitation, energy), Infrastructure (Road/rail transport, Water transport/ports/irrigation, Air transport) and Agriculture/agro-processing.

Based on the list of finalised and ongoing projects, it was established which countries were among the main recipients of ORET/MILIEV grants, and which Dutch companies were important suppliers to those countries in terms of transactions and total transaction amounts. Three countries: China, India and Ghana, feature prominently on the list of recipients. Of these, China has an official long-term agreement with the Netherlands with regard to ORET disbursements. China was offered NLG 500 million of ORET/MILIEV grants which have to be used over a period of seven years. Since IOB is also engaged in an evaluation of Dutch aid to the Palestinian territories, it was decided to include the ORET-projects granted to those territories.

In the period January 1994 to April 1999, 130 ORET/MILIEV-supported transactions (finalised and ongoing) were destined for projects in 33 countries, ranked as follows in terms of GDP (DAC, 1998):

9	Least-Developed Countries:	25 transactions
7	Other Low-Income Countries:	63 transactions
17	Lower-Middle-Income Countries:	30 transactions

Countries selected for field evaluation belong to the group of other Low-Income Countries (China, Ghana and India) and that of Lower-Middle-Income Countries (Palestinian territories). Among the Least Developed Countries, seven finalised projects

could be identified, dispersed over six countries. Given the concentration of the programme on other Low-Income Countries, in terms of number of transactions, it was decided not to include Least-Developed Countries in the field study.

The selected projects are spread fairly evenly over the three categories mentioned above: public services, infrastructure and agriculture. They also include the most important suppliers in the Netherlands. The sample is therefore considered to be representative for a world-wide programme involving some 35 recipient countries. Details on the sample selection are given in Chapter 3.

Projects were visited by IOB staff and external consultants, to perform reality checks and to assess the environmental and/or economic effects of the project. Discussions were held with project staff, relevant official authorities, representatives of Dutch companies in the recipient countries, Dutch embassy staff and staffs of implementing agencies in the Netherlands, i.e. the Private Sector Department of the Ministry of Foreign Affairs (DOB), the Netherlands Investment Bank for Developing Countries (NIO), the Netherlands Economic Institute (NEI) and the Ministry of Economic Affairs. A questionnaire was sent to Dutch suppliers in order to find out about their experiences and expectations regarding the programme. The Netherlands Procurement Centre (NIC) was asked to look into the adequacy of price checks performed by NEI up to early 1998. Since 1998, NIC has also carried out price checks for the ORET/MILIEV programme on a regular basis. Mission reports, describing the results of various project visits, have been sent to the Dutch suppliers concerned for comment. A reference group consisting of external experts has commented on the draft chapters of this report.

1.5 Organisation of the report

In chapter 2, the background is given to officially-supported export credits. Paragraphs 2.1 and 2.2 provide a background to the evolution of the Consensus or Arrangement, culminating in the Helsinki Package of 1992, whilst a brief overview of the development of export credits in the Netherlands in the period 1970-1990 is given in paragraph 2.3. These so-called mixed credits, comprising concessional and commercial loans, were evaluated in 1991, the results being given in paragraph 2.4. The programme evaluation methodology is described in chapter 3. Programme characteristics of the ORET/MILIEV programme are provided in paragraph 3.1, followed by an overview of the programme's objectives and conditions in paragraph 3.2. In paragraph 3.3 the approach of the study is laid out, whilst

paragraph 3.4 provides an explanation of the scores used to summarise project results in the evaluative chapters.

Chapters 4 upto 7 evaluate the projects selected for field study, following the clusters chosen for this evaluation: MILIEV (chapter 4), ORET Public Services (chapter 5), ORET Infrastructure (chapter 6) and ORET Agro-Industry (chapter 7). These chapters are structured as follows. First, an elaborate description of the projects and the field findings is provided: background, objectives and results. In subsequent paragraphs, the effects on development in the recipient country and Dutch export interests, as well as the efficiency of the projects, are assessed. The evaluatory chapters conclude with issues that emanate from the project evaluations.

In Chapter 8, the result of various desk studies is described in the context of the various steps of the project cycle and some pertinent managerial issues.

Annex 1 provides a description of the Policy and Operations Evaluation Department (IOB) of the Ministry of Foreign Affairs in the Netherlands. Annex 2 describes the set-up of the evaluation and lists the persons who have been involved in the evaluation. Annex 3 comprises a table in which all finalised and ongoing ORET and MILIEV projects in the period 1994-1999 are presented. The financial viability of the projects included in the field study is discussed in Annex 4. In Annex 5, the results of the desk study on finalised projects that were not visited are presented, while in Annex 6 the results of the questionnaire are described in some detail. Annex 7, finally, provides the lay-out of a typical ORET/MILIEV appraisal report.

2 Officially-supported export credits: background

2.1 The Arrangement: consensus on export credits

Through various mechanisms, such as state-supported export credit insurance, interest rate subsidies, and other forms of government support, exporting countries try to improve their competitive position on the world market. In the early 1970s, the United States, Japan and the members of the then European Community were involved in an escalating battle for more advantageous export credit terms. Rising import bills, resulting from the first oil crisis, forced them to step up exports. This put prospective buyers in a position to negotiate for ever better conditions in terms of interest rates, repayment period and down payment. Such favourable export terms, well below regular market rates, can only be realised through some form of government support, often through Export Credit Agencies (ECAs). ECAs are financial institutions that provide official support to export credits in the form of guarantees and/or insurance, and sometimes grants.

These grants constitute a drain on government resources and stimulate the emergence of 'spoiled markets' on which only increasingly concessional exports stand a chance. The need to reduce the increasing concessionality of exports demanded concerted action by the exporting countries. *Concerted* action was necessary: if only one country should abandon its trade distorting practices, it would lose its market share to those who continue such practices. This common need led to a series of high-level OECD meetings, culminating in a Gentlemen's Agreement in 1974. The United States, Japan and several member states of the then European Community agreed on common concessionality levels for exports: a minimum interest rate and a maximum repayment period for officially supported export credits. In subsequent years, the agreement was further refined in meetings where the interests of participating countries had to be weighed against one another. They wanted to reach consensus on such contentious issues as the level of down payments, the maximum grant element, differentiation of conditions for rich and poor countries, and the prior notification to participating countries (through the OECD in Paris) of advantageous export credit terms. Consensus on these issues was reached in 1976 and became effective as a first Arrangement on Guidelines for Officially Supported Export

Credits in 1978, after which the number of participating exporting countries gradually increased: the so-called 'Consultations Group'.

This OECD Consensus or Arrangement is a Gentlemen's Agreement in that its subscribers adhere to it on the basis of a common interest: avoiding a drain on government budgets as a result of competition on basis of officially-supported export credit terms. The OECD Arrangement in general is not binding, but the shared interest of participants has proved sufficiently solid as it is now in the third decade of its existence. For EU member states, however, the Arrangement is binding by force of a European Council decision taken in 1992.

2.2 Evolution of the Arrangement

The first Arrangement on Guidelines for Officially-Supported Export Credits of 1978 applied to export credits with a repayment term of two years or more, excluding military equipment, civil aircraft, nuclear power plants and agricultural products. In 1981 and 1983, minimum interest rates were increased and so-called Commercial Interest Reference Rates (CIRR) were introduced for OECD member-country currencies. The CIRRs reflect market interest rates for the countries concerned, on the basis of certain formulae that are adjusted on a monthly basis. For any subscribing government entering into a tied aid agreement, i.e. aid tied to the procurement of goods in the donor country, it was agreed that prior notification to the other subscribers would be required.

In 1991, the various conditions of the Arrangement as they had matured over the years, were consolidated in the so-called 'Helsinki Package'. This prohibited tied aid to richer developing countries with a per capita income over US$ 3,030 (1998) and to commercially viable projects. In order to verify the tied aid notifications of participants, an OECD Consultation Group on Tied Aid was formed to determine the commercial (non-) viability of projects benefiting from the donation. Soft loans to Least Developed Countries, credits with an 80 per cent grant element or more up to full grants, as well as projects valued below two million Special Drawing Rights[2] (NLG 5.4 million) were exempted from examination by participants of the Consensus.

2.3 Export credits in the Netherlands: 1970-1990

Exporters in the Netherlands were affected by the favourable financing terms extended by other donor countries in the early 1970s. Complaints by Dutch exporting companies

2 *IMF unit of account, based on a basket of currencies.*

about unfair international trade practices culminated in 1976 in the establishment of the so-called 'Matching Fund' and in 1978 of the 'Fifty Million Programme' by the Dutch Ministry of Economic Affairs. These Funds were intended to match the terms provided by other exporting countries for export transactions, so as to make it possible for Dutch companies to compete on an equal footing. In 1979, the Ministry of Foreign Affairs decided to establish a 'Mixed Credits Programme' for export transactions that were relevant to development in the buying country. Mixed credits for export transactions combine concessional loans or grants and commercial loans. Mixed credits thus had a dual objective: to provide a level playing field to Dutch exporters on the one hand, and to address the growing need of developing countries for credit, investment and capital goods on the other.

At the time, the Netherlands pursued a 'two-track' development policy aiming at poverty alleviation and the economic self-reliance of the recipient country. Mixed credits provided for the support of capital goods exports, and were thus geared to improve the economic self-reliance of the beneficiary country. With regard to the second track, poverty alleviation, it was decided that export transactions that were detrimental to the poor should not be funded through the programme. By way of a Parliamentary motion in 1979, the Dutch Parliament indicated that the development relevance of the mixed credits programme should always prevail over the export interests of Dutch companies (motion van Dijk/Aarts). This implied that the assessment of funding requests by the Interdepartmental Project Committee (Ministries of Foreign Affairs, Economic Affairs and Finance) would have to take the priorities of the recipient country into account.

Mixed credits were made available for the export of capital goods from the Netherlands to projects in developing countries. The aforementioned assessment of funding requests would also ascertain whether these projects were financially or economically viable; whether they generated exports or substituted imports; whether they would create employment opportunities and take account of the level of technological knowledge required for proper use of the capital goods for which support was requested. Since the Fifty Million Programme and the Mixed Credits Programme pursued common goals, they were merged in 1983 under the responsibility of the Ministries of Foreign Affairs and Economic Affairs. In subsequent years, the mixed-credits programme was used in support of the Dutch policy objective of promoting private sector development in developing countries, wherever possible in conjunction with the interests of Dutch industry.

To enhance the effectiveness of mixed credits in this respect, they were to be targeted towards countries that were principal recipients of the Dutch aid programme or Dutch priority sectors within these countries. In 1987, mixed credits were replaced by a programme for Less Concessional Loans (LCLs), which not only provided concessional loans for exports of capital goods but also included service contracts that were linked to civil engineering projects or institution building in developing countries. In 1988, it was decided to adhere to the guidelines of the OECD consensus or 'Arrangement' for tied aid credits, in order to enhance discipline and transparency among donor countries. This adherence implied a concessionality of 35 per cent and prior notification of soft-loan offers to other participating countries in the OECD Consensus. This would allow competitors to react to such offers with a similar concessionality. However, the Netherlands also practised the principle of matching and non-initiating. In other words, the Netherlands was not supposed to initiate any offering of soft loans, but only to react to such offers by other exporting countries.

Conditions further stipulated that at least 70 per cent of the manufacture, products or services should emanate from the Netherlands and that the loan could only cover the foreign component of the project. There were further restrictions on the maximum amounts for single transactions, companies and recipient countries. These restrictions have changed over the years. Least developed countries were excluded from the programme as capacity to repay the loans was an important condition for the allocation of mixed credits. The programme for mixed credits and subsequently Low Concessional Loans in the period 1979-1989 disbursed approx. NLG one billion, generating exports with a transaction value of approx. NLG three billion. The transactions comprised deliveries of capital goods (74 per cent), contract works (20 per cent), turn-key projects (5 per cent) and studies (1 per cent).

2.4 The 1990 evaluation of mixed credits

In 1990, the Policy and Operations Evaluation Department (IOV, now IOB) evaluated the mixed credits programme. The study found that some two-thirds of the mixed credits were provided to projects in economic infrastructure: energy, transport and communication, whilst the remainder went to such productive sectors as agriculture and industry. The principal recipients were state and semi-state organisations in middle-income countries, among which China and Indonesia were the largest. The evaluation further established that more than half the contracts were the result of direct negotiation, the

remainder being made up of international and limited competitive bidding. As suppliers normally take the initiative for a transaction and its (mixed) funding, most were not aware of other concessional export credit offers for the same project; hence, the condition of non-initiation was not considered realistic. Since applications for mixed funding were only marginally appraised, many problems were found with regard to technical and financial capacity of the recipient institutions: more than half the projects suffered from inadequate local funds.

The evaluation concluded that only a quarter of the projects were effective in terms of financial viability (capacity to generate funds to pay off the investment), while half were considered financially unviable. This rather mediocre performance was attributed mainly to problems with local cost financing and maintenance, overcapacity or low utilisation rates, and lack of technical expertise. Since mixed credits could only be used for imported goods, there was a bias towards capital-intensive goods and techniques that were ill-suited for the budget-constrained recipients. The score with regard to economic viability (the impact on the economy in terms of employment creation and income generation) was better: some 60 per cent of the projects were considered to have had positive spin-off effects on the regional or national level. The rating with regard to export promotion was high: some 90 per cent of supported transactions would have gone to suppliers outside the Netherlands in the absence of the credit; 70 per cent of the funds went to 10 large companies (which also subcontracted the production of parts to smaller companies).

The evaluation further concluded that export relevance had overshadowed the development relevance of the programme: too few safeguards were built into the programme to allow for international competitive bidding and *ex-ante* assessment of development effects. As such, fair prices would not always be guaranteed and export relevance could easily prevail over development relevance. A comprehensive appraisal of requests for mixed funding was *inter alia* recommended.

3 Programme evaluation methodology

3.1 Programme characteristics in the period 1990-1999

In the early 1990s the findings of the IOV evaluation on Mixed Credits in the period 1979-1989 were reflected in the white paper *A World of Difference*. This, and the 'Helsinki Package', marked some changes with regard to the Mixed Credits or Low-Concessional Loans Programme, which comprised a mix of commercial and soft loans for each transaction. It was now referred to as the Programme for Development-Relevant Export Transactions (ORET), as the Low Concessional Loans were replaced by full grants. Half the programme budget was targeted at regular and creditworthy recipient countries of Dutch aid ('offensive use'). The other half was to be used in reaction to offers from donors to other creditworthy countries, including the least developed ('defensive use'). Lists of both types of countries were to be adjusted and published on a six-monthly basis. More extensive appraisals would have to guarantee the development relevance of projects for which funding was requested, whilst training and maintenance systems could be incorporated into the transaction to enhance the development effect. In 1993, the white paper entitled *A World in Dispute* introduced the MILIEV programme for the partial funding of investment projects which were specifically aimed at environmental improvements in developing countries. MILIEV-supported transactions enjoyed higher levels of concessionality as compared to ORET, and could be extended to private companies with minimal involvement of the recipient country's government. In January 1998, the ORET and MILIEV programmes were merged and subjected to the conditions that applied to ORET.

The programme for ORET and MILIEV grew from less than NLG 100 million per year in the early 1990s to some NLG 330 million in 1998. The maximum concessionality for development-relevant exports varied over the years; generally varying from 35 to 50 per cent of the transaction value for ORET, or to 60 per cent for MILIEV. The conditions for acceptance of proposals are elaborated in some detail below.

Programme implementation 1994-1999

In the period under evaluation, 1994-1999, NLG 1020 million were disbursed or committed to finalised and ongoing projects under the ORET/MILIEV programme. As at 1 April 1999 a further NLG 148 million had been committed to new projects, but these remain outside the scope of this evaluation. Export transactions with a total transaction value of NLG 2084 million have been realised. Table 3.1 gives an overview of the most important implementation features of the ORET/MILIEV programme.

Table 3.1 ORET/MILIEV programme overview 1994-April 1999, NLG 1000

	Number of transactions	Finalised	Ongoing	Transaction value	Grant element	Average grant percentage
MILIEV	42	16	26	491,201	271,362	55
ORET	76	32	44	1,593,324	749,476	47
Total	118	48	70	2,084,525	1,020,838	49

A detailed overview of all transactions by category is presented in annex 3, indicating for each: the transaction and grant amounts, the country of destination, the Dutch supplier, the year of approval of the grant and the project status (finalised or ongoing).

3.2 Programme objectives and conditions

The main objective of the ORET/MILIEV programme is to enable developing countries to procure goods and services in the Netherlands which will enhance employment opportunities in the recipient country. The Netherlands government provides part of the procurement costs as a grant to the recipient government or company, which should guarantee the funding of remaining procurement costs, under the following conditions:

- the transaction should be relevant to the development of the recipient country;
- the transaction should be relevant to the Dutch economy;
- the transaction should not be commercially viable.

A brief elaboration of each condition is given below, based on brochures of the Private Sector Department in 1996 and 1998. A new brochure has been published in 1999, taking the implications of recent Dutch subsidy legislation into account, but this has no consequence for the projects discussed in this review.

Development relevance, according to ORET/MILIEV brochures, comprises three basic elements:

- the project should create or maintain employment, directly or indirectly, or improve the conditions for economic development in the expectation that this will enhance employment opportunities. Employment effects of improved physical, economical and social infrastructure can only be expected in the middle or longer term;
- each project in which the goods or services are to be deployed should be in line with Dutch development objectives. For each project creating employment, it is assumed that it ultimately will have a positive effect on poverty. Projects should not be detrimental to the interests of the poor, women or local environmental conditions;
- projects should be financially, technically and managerially viable. A project is financially viable if it generates sufficient income to service the debt (procurement cost minus the grant) and to cover running costs. Projects such as public-service projects which generate little or no income, should receive a guarantee that the debt will be serviced, for instance by central government. Technical and managerial viability is achieved when the recipient is able to operate, maintain and service the deliverables, either through prior experience or through a training component in the project.

Export relevance, according to the brochures, is constituted by adherence to the following conditions:

- the transaction should comprise at least 60 per cent Dutch products, i.e. goods and services with a Dutch value added of 51 per cent or more. This means in practice that the Dutch content may be well below 60 per cent;
- the exporting company should be of good financial and technical reputation and capable not only of handling the transaction, but also of maintaining a long-term relationship with the recipient country.

The OECD condition of commercial non-viability of the project benefiting from the transaction is measured through two 'key tests';

- a project is considered commercially non-viable if it is unable, under free-market conditions, to generate sufficient income over a period of 10 to 12 years to cover the costs of invested capital and normal running costs. It should, however, be financially viable: defined as being able to generate sufficient income to cover these costs on the basis of soft conditions (transaction cost minus grant). In projects that do not gener-

ate any income of their own, e.g. some public-service projects, repayment of the loan will have to be guaranteed from other sources;
- a project which is in principle commercially viable but which nevertheless has difficulties in attracting funds under normal market conditions (risk, experiment), may be funded on the basis of soft conditions if the Consultation Group so decides. Transactions with LLDCs and transactions with a value under SDR two million (NLG 5.4 million) are in principle allowed to be commercially viable and are therefore exempted from the commercial non-viability test.

Procedures for the granting of ORET/MILIEV funding include several steps:
- submission of a request;
- appraisal;
- notification to the Consultation Group;
- acceptance of the proposal;
- reporting during implementation;
- project completion.

These various steps, constituting the management aspects of the programme, are elaborated upon below.

Applications for ORET or MILIEV funding must be instigated by the exporting company in the Netherlands. The company should prepare a well-documented proposal in close cooperation with its counterpart in the importing country. To qualify for a grant, the following steps must be taken:
- the transaction proposal should be submitted to the Ministry of Foreign Affairs which is responsible for processing the requests and for budget control;
- the proposal will have a first screening by the Private Sector Department of the Ministry of Foreign Affairs (DOB, formerly DEW), and subsequently by the Interdepartmental Project Committee comprising representatives of the Ministries of Foreign Affairs, Economic Affairs and Finance. The Ministry of Foreign Affairs checks the eligibility of the recipient country and makes a first appraisal of the development relevance of the transaction;
- once the Committee has accepted a proposal in principle, a thorough appraisal of the proposed transaction is carried out by an external consultancy firm: during the period under evaluation this was the Netherlands Economic Institute (NEI). This appraisal will cover all aspects of development relevance, Dutch export interests and

pricing; both exporter and importer are expected to extend their full cooperation. The lay-out of a typical NEI appraisal report is provided in Annex 7. If the need should arise, NEI may undertake an appraisal mission to the recipient country;

- a copy of the NEI report is sent to the Ministry of Economic Affairs to enable it to assess such aspects as commercial non-viability and Dutch economic interests. This assessment is communicated to the Ministry of Foreign Affairs together with an advice as to whether the proposal is suitable for notification in Paris. The Ministry of Finance ascertains that the proposal is in line with international EU and OECD agreements and examines such matters as credit insurance. On the basis of the NEI appraisal report and advice from other IPC members, the Private Sector Department will prepare a final assessment;
- in the case of final approval by the Minister of Development Cooperation, the exporter will be asked to accept the conditions formulated with respect to grant disbursement. The exporter is then obliged to submit six-monthly reports regarding the implementation of the project: i.e. acquiring the commercial loan, the various phases of production, export and installation of the goods, possible problems and delays. The Ministry of Foreign Affairs will inform the recipient government and the Netherlands Investment Bank for Developing Countries (NIO) of approval of the transaction. NIO will subsequently offer the grant to the recipient government; acceptance will oblige the recipient to ensure a commercial loan for the remainder of the transaction value. If this loan is arranged through a Dutch commercial bank, NIO will take care of both grant and loan, including insurance of the credit by the Netherlands Credit Insurance Company (NCM) or other insurance company;
- the project is considered to be completed once the recipient institution has signed a Final Certificate of Completion and an external Dutch accountant has certified that the Dutch component of the exported goods and services was in line with the demands of the Ministry of Economic Affairs.

The length of the appraisal procedure was set at a maximum of six months and later, in 1996, at four months. In practice, the procedure can take longer if data gathering proves cumbersome. In the event of inadequate cooperation by the Dutch company and recipient institution, or poor reporting by the exporting company, the procedure may be aborted. Once the recipient government has accepted the grant offer, it has six months in which to arrange for the commercial loan. If it encounters problems, this period can be extended by further six-month periods.

3.3 Approach of the study

The transactions in the review period were inventorised on the basis of the Private Sector Department data base, providing: subject, transaction amount, grant, country of destination and status (completed or ongoing) of the transaction. This yielded a list of 48 finalised and 70 ongoing transactions, involving 63 Dutch suppliers and 33 countries. The coverage of these totals is briefly presented in Table 3.2, and elaborated in the following sections.

Table 3.2 Coverage of countries, projects and suppliers (coverage in percentages)

	Countries	Ongoing projects	Finalised projects	Suppliers
Total	34	70	48	63
Field study of finalised and ongoing projects	4 (12)	13 (19)	17 (35)	
Desk study on management aspects of finalised projects not covered by the field study	14 (41)		20 (42)	
Survey among suppliers[1]				43 (68)
Price checks[2]			17 (35)	

1 *58 suppliers have been sent a questionnaire, 43 have responded*
2 *17 finalised projects have been subjected to price checks, 14 were also subjected to field investigations*

3.3.1 *Selection of sites for field visits*

Sites for field visits were selected on the basis of the following considerations:

- both ORET and MILIEV projects;
- both projects that are smaller or larger than SDR 2 million (NLG 5.4 million, smaller projects are notified to the Consultation Group but not screened for their commercial non-viability);
- the main sectors in which ORET/MILIEV projects are carried out (public services, infrastructure, agro-industry and environment), as well as the main sub-sectors (energy,

health, sanitation, studies, various transport modes and infrastructural works);
- more than one project in the main categories in order to prevent that conclusions be drawn at (sub-)sectoral level on the basis of just one project;
- both finalised and ongoing projects;
- the main beneficiary countries of the programme;
- the main Dutch suppliers benefiting from the programme.

Finalised projects in China, Ghana, India and the Palestinian territories, as well as ongoing projects in their vicinity which could be visited *en route*, appeared to provide a fair coverage of the main sectors addressed by the ORET/MILIEV programme. For all main sub-sectors, at least two projects could be included in the field visit, allowing for balanced conclusions on the sectoral level. Tables 3.3 and 3.4 show the coverage of selected projects vis-à-vis the total of MILIEV and ORET ongoing and finalised projects.

Table 3.3 MILIEV 1994-1999: Coverage of projects selected for field study

	Total amount (million NLG)	Number of projects				Coverage (%)	
		<SDR 2 million	selected	>SDR 2 million	selected	projects	amount (million NLG)
Public Services							
Energy	185.4	10	2	8	3	28	33
Sanitation	151.5	4	0	9	3	23	25
Studies	17.9	5	0	2	1	14	47
Infrastructure							
Rivers/shores	134.4	-	-	3	0	0	-
Agriculture							
Weed harvesting	2.0	1	0	-	-	0	-
Total	491.2	20	2	22	7	21	23

The coverage of selected projects concentrated on Public Services, the predominant sector in the MILIEV programme. Projects under infrastructure deal particularly with river dredging and shore protection for environmental purposes; such works are also covered by the ORET sample. The categories Energy and Studies comprise numerous small to very small projects (between NLG 200,000 and 300,000). The list of new commitments no longer includes such small projects; the smallest on this list amounts to NLG 1.1 million.

Table 3.4 ORET 1994-1999: Coverage of projects selected for field study

	Total amount (million NLG)	Number of projects				Coverage (%)	
		<SDR 2 million	selected	>SDR 2 million	selected	projects	amount (million NLG)
Public Services							
Energy	183.4	-	-	4	2	50	39
Sanitation	224.8	1	0	10	3	27	25
Health	284.5	1	0	7	4	50	62
Other	4.7	1	0	-	-	0	-
Infrastructure							
Land	316.5	1	1	8	3	44	53
Water*	503.3	8	1	24	4	16	19
Air transport	35.0	-	-	1	1	100	100
Agriculture							
Agro-processing	30.6	8	2	-	-	25	29
Manufacturing	10.5	2	0	-	-	0	-
Total	1,593.3	22	4	54	17	28	39

* *In principle this category also comprises a standing commitment of the Netherlands to co-fund the construction of a Palestinian port in Gaza: NLG 42.5 million (1994). Since the actual start of the works depends on political decision making, the project is not administered in the list of oret commitments and remains outside the scope of this report. It is covered by the IOB evaluation of Dutch aid to the Palestinian territories: (IOB evaluation no 282, November 1999)*

The coverage of ORET projects selected for field visits concerns the main categories under ORET: Public Services and Infrastructure. Two rather a-typical project categories have remained outside the purview of field visits (zero coverage), namely: 'other' public services (the making of a film), and manufacturing (starch and convenience food processing). The modest role of these projects in the total programme implies that their exclusion is not expected to affect the final conclusions.

The coverage of both finalised and ongoing ORET/MILIEV projects selected for field visits is summarised in Table 3.5.

Table 3.5 Sectoral dispersion of projects selected for field visit

Sector	<SDR 2 million	>SDR 2 million	Total
Public services	2	16	18
Infrastructure	2	8	10
Agro processing	2	-	2
Total	6	24	30

Thirty ongoing and finalised projects have thus been selected for field visits, representing some 25 per cent of the total (118) in the period under evaluation.

3.3.2 Desk studies

On basis of file studies for projects to be visited in the field, a number of issues were identified that merited further desk studies. They were:

- length of the project cycle (submission of proposal, appraisal, obtaining a commercial loan, implementation and reporting by the supplier, finalisation) and problems encountered in the timely disbursement of funds ('stop - go' phenomenon);
- quality of price checks;
- opinion of suppliers on various aspects of the ORET/MILIEV programme.

To address these issues, the following desk studies have been carried out:

- out of 31 finalised projects not covered by field visits, some 20 ORET/MILIEV projects were purposely selected for desk study (full coverage was not possible due to time constraints; the remaining 11 projects were either similar to projects selected for field visits or were very small);
- a questionnaire among 58 suppliers (out of a total of 63; five were difficult to trace or no longer extant), which yielded a response of 74 per cent;
- a review of price checks for 17 finalised projects, 14 of which were visited in the field;
- a file study of problems related to management of the ORET/MILIEV programme on the basis of internal memoranda, progress reports and disbursement figures as reported by the Private Sector Department to the Minister for Development Cooperation and the Dutch Parliament.

The review of 20 finalised ORET/MILIEV projects assessed:

- the actual length of appraisal procedures;
- the time lapse between the awarding of a contract and acceptance of the grant by the recipient government;
- the frequency and nature of problems occurring during implementation;
- the quality of reporting by the supplier.

The survey aimed at gaining an insight into the opinions of suppliers with regard to the ORET/MILIEV programme. In particular, questions were asked:

- to obtain better insight into the opinion of suppliers regarding ORET/MILIEV procedures, conditions and development objectives;
- to learn about the motives for applying for ORET/MILIEV funding;
- to obtain an indication of the chances that ORET/MILIEV transactions will result in further trade opportunities or investments.

The review of price checks had the following objectives:

- to evaluate the methodology and conclusions regarding price checks and to assess the role of external sectoral experts;
- to assess the adequacy of profit margins used by suppliers.

The file study on procedural problems covered ORET/MILIEV procedures, memoranda, letters and reports. It addressed the following issues:

- the time span between acceptance of an application and the start of implementation;
- difficulties encountered in securing the commercial loan;
- problems in implementation;
- the so-called 'stop - go' phenomenon whereby the window for ORET/MILIEV applications is closed when disbursements exceed the programme's cash ceiling. This has occurred two times; once during the review period in 1997.

3.4 Presentation of study results

The questions formulated in the Terms of Reference can be subdivided into three main

categories: development relevance, export relevance and programme management. Matters of development and export relevance are covered by the field studies, whilst issues pertaining to programme management are covered by both field and desk studies.

3.4.1 Field study

The case descriptions of projects selected for field visits are presented in detail in Chapters 4 to 7. Descriptions are based on desk studies of project files, reality checks and interviews with project staff and, where possible, with representatives of Dutch suppliers. The description of the projects follows the main evaluation questions, and project results constitute the basis for the assessment.

Development relevance

Development relevance comprises three main components: direct and indirect employment effects; effects on the poor, women and the environment; and technical/managerial and financial sustainability. In the evaluatory chapters the respective components of development relevance are assessed in the following ways.

Employment effects

Direct employment effects are measured by the number of people permanently employed as a direct result of the project. The actual number of permanent jobs and temporary employment created during project implementation is presented in the tables.

Indirect employment effects have been or will be realised when conditions for increased employment are created by the project through improvements to the physical, economic or social infrastructure. Indirect employment effects are difficult to measure in the context of this review. An indication of such effects is therefore included in the assessment of the wider effects that the project concerned will have on the economy. Should such conditions be realised, or are they expected to be realised in the future, the score is positive (+). If no particular effects are expected in the longer run, the score is neutral (0). If the project is expected to be detrimental to long-term development, the score is negative (-).

Effects on the poor

The ORET/MILIEV programme conditions stipulate that projects should not generate adverse effects with regard to the poor, women, or the environment. Hence, if project effects have not been detrimental to the poor in general or to women in particular, the project scores positively (+). In the case of public-service projects, a positive score is given if their beneficiaries included poorer sections of the population and/or women in particular. A negative score (-) is allotted to projects that have been or are expected to be detrimental to the poor. A neutral score (0) does not apply, since the programme's condition is to avoid negative effects on the poor; hence, the absence of any detrimental effect on the poor will yield a positive score.

Environmental effects

With regard to (expected) environmental effects, a distinction should be made between ORET and MILIEV projects. The condition for ORET projects is that they should have at least a neutral effect on the environment. Hence, if no detrimental effects have occurred and are not expected, the score will be positive (+). MILIEV projects, however, must have a positive environmental effect; hence, a neutral effect will score (0) whilst a positive effect will score (+). Detrimental environmental effects for both oretand MILIEV projects will score a minus (-).

Viability

Viability comprises two main elements: technical/managerial and financial viability. The former concerns the appropriateness of the level of technology rendered, and the managerial capacity of the recipient entity to maintain and operate the deliverables in the near future. If this is the case or is likely to be the case, a positive score (+) is given. The absence of technical viability or lack of certainty will score negatively (-). Financial viability for ORET/MILIEV is defined as the ability of the recipient to repay the commercial loan, i.e. the transaction amount minus the grant, from revenues generated by, and flowing back to, the project. A positive score (+) indicates that financial viability is guaranteed, whilst a negative (-) indicates the lack of any direct income generated by the project. A zero (0) indicates that the income generated will partially cover the investment and running costs, with the remainder being provided by other sources. The basis for scores on

financial viability are elaborated in Annex 4. If the project does not generate (sufficient) income of its own, repayment has to be guaranteed from other sources.

Export relevance

The export relevance of ORET/MILIEV transactions is determined by adherence to the condition that 60 per cent of the deliverables should be sourced in the Netherlands, or 40 per cent in the case of consultancy (to stimulate the use of local staff), and to the ability of the supplying company to sustain a longer-term relationship with the developing country. The tables on export relevance presented in the evaluative chapters show the actual percentages of Dutch-sourced deliverables and of man years realised in the Netherlands.

The chances for a longer-term relationship between supplier and the recipient country will depend on client satisfaction (timeliness, quality) and presence of the supplier in the country. Such satisfaction is expressed through the final certificate of completion for the finalised projects and orally during interviews. Full satisfaction yields a plus (+), whilst a minus (-) indicates that the client has some serious complaints. The chances for a longer-term relationship are rated positive (+) if the supplier has secured new contracts (either commercially or with ORET/MILIEV support) and/or has embarked on some form of presence in the recipient country. Such a presence can range from a local agent to a joint venture with local producers. A minus (-) indicates that it is unlikely that further orders will materialise.

Efficiency

The efficiency of ORET/MILIEV transactions basically evolves around: (1) the price/quality ratio of the goods or services, and (2) the management of the various stages of the project cycle. The tables scoring efficiency in the evaluative chapters comprise two columns: one on the adequacy of prices and one on the actual length of the project cycle, i.e. from submission of a proposal to the final certificate of completion. When prices have been adequately checked, and also appear fair after doublechecking, a plus is given; a negative indicates too high prices despite checks and doublechecks. If appraisal, acceptance, implementation and reporting are realised within the time frames set for the various stages, the score will be positive (+). If (substantial) delays have occurred in either phase, the result will be indicated by a minus score (-).

The various delays and their causes were already apparent from the preliminary file studies. As mentioned above, several desk studies have been undertaken in the effort to shed light on the causes for these delays. Generic issues regarding management of the project cycle, emanating from the field study, are therefore elaborated upon further in Chapter 8 on the basis of findings of the desk studies.

4 Evaluation MILIEV

4.1 Description of selected projects

During the evaluation period, 1994-99, some NLG 270 million were granted to MILIEV projects. A total transaction value of NLG 490 million was realised, representing an average grant percentage of 55 per cent. Projects were mainly targeted towards public services such as energy and energy saving, sanitation and environmental studies, and also infrastructural works for shore protection and drainage. In agriculture some projects were supported that aimed at the processing of harvest residues. Small and often experimental projects were supplied by many firms to a large variety of countries. Larger projects, i.e. exceeding SDR two million, were largely concentrated in China and India, with a fairly diverse list of suppliers.

The field study comprised visits to nine projects in two countries; seven projects were larger than SDR two million. An overview of visited projects is given in Table 4.1 below. A complete overview of projects in this category is provided in Annex 3.

Table 4.1 MILIEV: overview of projects selected for field visits* (amounts in NLG millions)

Year of approval	Sector	Transaction amount	Grant amount	Country	Project status
	Energy				
1995	Wind Turbines Tamil Nadu	42,832	25,699	India	Finalised
1997	Wind Turbines Hui Teng Xi Le	7,731	4,639	China	Ongoing
1994	Wind Turbines Ramagiri	7,500	3,000	India	Finalised
1996	Biomass briquetting	4,584	1,834	India	Ongoing
1995	Demonstration Low NOx burners	2,400	2,400	China	Ongoing**
	Studies				
1994	Yunnan Environmental Master Plan	8,410	6,450	China	Ongoing
	Sanitation				
1994	Water Treatment Chengdu	18,944	7,578	China	Ongoing
1997	Banknote briquetting	10,540	6,324	China	Finalised
1994	Banknote briquetting	8,815	3,526	India	Finalised

** See maps on page xii through xv for project locations.*
***This project was presented to the Government of China on the occasion of the Dutch Prime Minister's visit to Beijing in June 1995, hence the exceptional grant level of 100 per cent.*

4.1.1 *Description of MILIEV energy projects*

Wind turbines, Tamil Nadu, India

India's demand for power is growing rapidly. Long-term demand in the year 2000 is assessed at some 465 billion kWh, whilst the power generated in 1991/1992 was 288 billion kWh and in 1992/1993 some 322 billion kWh. The Indian Government encourages private sector participation, as public sector agencies experience difficulties in realising the planned annual expansion of some 3,000 MW per year. Simultaneously, it promotes the generation of sustainable energy by the private sector through low import taxes on wind turbine components, fiscal measures allowing depreciation of total investments within one year, and the possibility of obtaining low interest loans from the Indian Renewable Energy Development Agency (IREDA).

The project under consideration concerns the installation of 80 wind turbines, with a nominal power of 20 MW, at a wind turbine farm in Tamil Nadu, aiming at producing 43 million kWh per year. These wind turbines are installed by the supplier in cooperation with a local joint venture partner. Service and maintenance during the first three years forms part of the contract. After this initial period, a separate service and maintenance contract will come into force with the joint venture. Also included as part of the project, but excluded from the transaction, are on-the-job training for installation, operational aspects, service and maintenance.

The commercial organisation of the project allows the implementing company to sell the electricity produced by the wind turbine farm to a sister company. An agreement to this intent was signed for a period of 20 years at a base rate of 2 Rupees per kWh (corresponding to the tariff prescribed by the Tamil Nadu Electricity Board [TNEB]). It is important to note that the electricity generated by the wind farm is not supplied directly to the sister company, but indirectly through the grid to which the wind farm is connected by a 33 kV transmission line. The grid itself is owned and run by TNEB. For use of the grid the private developer is charged 2 per cent of the energy generated by his wind mills. TNEB levies a wheeling charge of 15 per cent of the current base rate for electricity sold to third parties. Since start-up of the project this base rate has been increased to 2.25 Rupees.

The project suffered some delay as a result of a last-minute change of location and a liq-

uidity shortage on the capital market. This did not affect the quality of the project; the wind turbines in Tamil Nadu are fully operational and function at their design capacity. The end-user now has a more reliable electricity supply to his factory, which will enhance its production performance, at neutral cost for the duration of the contract: a period of 20 years. Power supply in the direct surroundings of the wind farm has been stabilised and the voltage in nearby villages increased. Some 48 people are permanently employed by the farm and staff training has been sufficient to guarantee that the turbines function smoothly. The supplier's local joint venture partner has developed a computerised monitoring system that has marketing potential in the region. The project was geared towards transferring technology to the maximum extent, partly with an eye to local production.

Wind turbines, Hui Teng Xi Le, China

The Government of China is giving special attention to the development of renewable energy sources, in order to provide least cost electricity to remote areas. In the longer term the intention is to diversify China's energy sources so as to curb pollution from coal-fired power plants. The project consists of the delivery and erection of a wind park of nine wind turbines with a capacity of 600 kW per unit, and the supply of spare parts, technical documentation, technical service, training, as well as a two-year guarantee. The remaining investment in foundation works, wind towers, electric network and operational infrastructure is funded directly by the Chinese counterpart, the Inner Mongolia Wind Power Company, established in 1995 as part of the Inner Mongolia Electric Power Company.

The key objectives laid down in the conceptual stage of the project comprised extension of the energy supply by means of environmentally-friendly and renewable energy and the supply of power to Jining City. The Chinese authorities also pursued a number of medium- and long-term objectives, such as the provision of sustainable energy throughout China, the building-up of a lasting relationship with a renowned supplier of quality-certified turbines, the enhancement of production and employment in the Chinese wind energy sector, and the transfer of knowhow.

The project has not experienced any major delays, and the turbines function at the guaranteed design capacity. Some initial problems emanating from prevailing low temperatures have been suitably solved. Performance monitoring is realised through equipment that operates via the public telephone system. Some six staff are permanently employed as a result of the project. Four maintenance engineers have been trained and a two-year guarantee, including service and spare parts, has been extended to the user. The end-user had already acquired experience with wind technology in similar projects on the same location.

As in the case of Tamil Nadu, the immediate surroundings of the project have benefited from a stabilised electricity supply and some villages have been connected to a power grid for the first time.

Wind turbines, Ramagiri, India

The wind turbine project in Ramagiri, Andhra Pradesh, has benefited from the same conducive investment environment as that in Tamil Nadu. It specifically provided for the supply of 14 wind turbines with a total capacity of six MW and a capability to produce 11.8 million kWh per year: ten turbines with a rated capacity of 500 kWh and four turbines with a rated capacity of 250 kW. The project was initially destined for the wind farm in Gojiness in the State of Gujarat; due to bureaucratic problems the site could not be obtained in time, and the project was therefore transferred to Ramagiri. Preparatory civil works were paid for by the Indian counterpart and are not included in the total transaction value. The supplier aimed at creating a market for wind turbines in India through a joint venture with a local company and by providing hardware and technical knowhow with which to build wind farm plants for the account of private investors. The long-term objective was to create employment in India through the local production of wind tur-

bines based on Dutch wind turbine designs with a local input of up to 80 per cent.

The project was delayed by the late delivery of local supplies and the time taken by the A.P. Electricity Board to link the wind turbine park with the high tension distribution network. These delays were adequately absorbed by the joint venture, however, and did not affect project quality. The plant operates at design capacity with an output of 8.9 million kWh. This is less than the projected 11.8 million, due to below average wind speeds in the past two years. The construction employed 70 to 80 workers on assembly and erection; 15 are permanently employed for operation, security and maintenance. Local maintenance staff have been trained in the Netherlands. The designs and technology are of proven quality and the equipment is suitable for local Indian conditions. The necessary spare parts and tools have been supplied. The automatic monitoring system has not operated as expected and manual daily controls and readings are at present being carried out. The project had a demonstration effect and has generated further orders for windfarm projects on the same location. The first wind farm on any remote location usually necessitates investment in basic infrastructure. Once access roads and a transmission sub-station have been built, other investors in wind energy are attracted to the location. Around Ramagiri this has led to derived effects such as the emergence of small hospitality facilities, the availability of skilled maintenance workers, and an upgrading of wastelands. A nearby college has developed a curriculum for non-conventional energy technology.

Biomass briquetting, India

Briquetting is a technology by which to transform biomass residues into fuel for use in industry and cooking. Such densification into briquettes is theoretically justified by their enhanced combustion characteristics compared to the burning of loose biomass. The technique of briquetting consists of feeding a wide range of bio-mass materials (e.g. saw-dust, rice husk, groundnut shells, etc.) into a rotating screw which, under high pressure, produces strong briquettes with high density and a potential for further carbonisation.

India already relies heavily on biomass residues for its energy supply, and substantial quantities of firewood, agro-residues and cowdung are used. There is a gap, estimated at 98 million tonnes per year, between demand and supply for firewood. Where cowdung is used as fuel, the land is often deprived of necessary nutrients. An estimated 350 million tonnes of agro-residues are produced annually, of which around 100 million tonnes are not used for any purpose due to the costs involved in their transportation. These are therefore available in large quantities for briquetting on-the-spot. Moreover, crop rotation means that sufficient material is available throughout the year to keep a briquetting unit, sited near to an agro-processing industry, in continuous operation. The transport of loose biomass (mustard seed, rice husk, sawdust, peanut shells, etc.) is expensive, but

briquetting opportunities near an agro-processing unit make it feasible. Every tonne of briquettes will replace the use of either coal or firewood, and reduce the burning of loose biomass. Moreover, it makes efficient use of refuse that would otherwise be wasted and provides extra income for women who dry the mustard crop residues at home.

This pilot project aims at introducing the screw-extruder technology for biomass briquetting in India, in order to convert the large reservoir of agro-industrial residues into a new source for fuel that will serve rural as well as urban industries and households. The medium-term objective is the introduction on a commercial basis of 100 similar extrusion and briquetting machines with a total capacity of one million tonnes per year. The project also aims at transferring the necessary technical knowhow with which to achieve this. Its immediate objective is the introduction of 24 screw-extrusion-based briquetting machines on six locations with a capacity of 61,200 tonnes.

The project experienced delays in the approval period because it was considered commercially viable. Approval was granted when project costs were brought under SDR two million. Implementation was also delayed because it was decided that a pilot plant should first be built in Bharatpur before the other five locations were selected. The six sites have now been assigned in four states, but persistent problems have made the actual deployment of plants in these locations unlikely. An initial plant has been installed in Bharatpur, so far with two extruders. The Dutch component in the deliveries seemed considerably less than 60 per cent because all support equipment was of Indian manufacture. Reporting by the supplier is inadequate, which is unfortunate given the problems with regard to the Dutch component. Measures have reportedly been taken to assure sufficient sourcing in the Netherlands during further stages of the project.

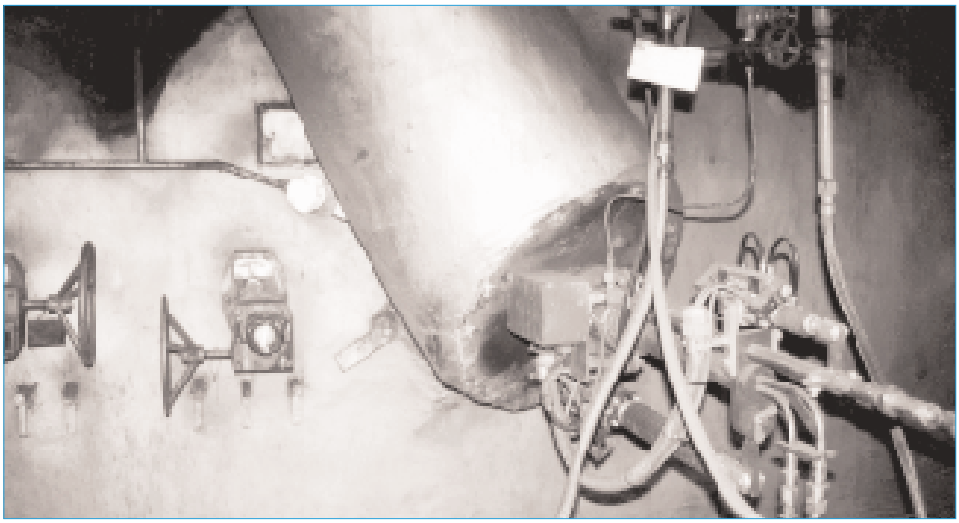
One extrusion plant with four extruders should employ some 22 persons, four technicians and 18 casual labourers. This is an estimate as the first plant in Bharatpur still has only two extruders and other plants have not yet been installed. Should the 100 extruders ultimately be delivered and installed, than some 2,200 jobs would be created. The practice of briquetting is already widespread in India, using piston presses. These are less effective than screw extrusion; screw extruders are more expensive, but their production potential is higher and their output is of higher quality. The screws are particularly good for sawdust; in the case of mustard seed used in Bharatpur, the screws need to be removed every day in order that new layers of coating may be put on. A stock of screws is available for six

months of operation. The technical staff is well able to handle the equipment. Daily recoating of the screws and the early ordering of new screws is a prerequisite for smooth operations, and will continue to be so when the initial balancing problems have been overcome.

Operation of the two installed extruders is not without technical problems, as balancing of the equipment takes time. Labour conditions are poor as labourers are insufficiently protected from dust and heat. The proper installation of a complete plant with four extruders should reduce these problems as various outlets can then be properly sealed. Once these problems have been overcome, the demonstrative effect of the project could be positive and produce a commercial solution to a relevant environmental issue: several million tonnes of biomass lying idle while there is a shortage of fuel. There are indications that the pilot project will manage to become commercially viable: it uses only 4 per cent of the excess biomass available in the area and there is a sure market for briquettes in the vicinity.

Demonstration low-NOx burners, China

On the occasion of the Dutch Prime Minister's visit to China in 1995, a seminar on 'Clean Coal Technology' was organised with the aim of presenting to the selected Chinese audience an overview of the potential of Dutch companies for cleaner coal-burning technologies. To underpin that aim, the Prime Minister offered a demonstration project to the



Chinese Authorities comprising the supply of 12 Low NOx Burners of 40 MW of thermal capacity for use in power plants with a capacity of 200 MW. The gift further included a 'burning management system' comprising flame monitoring equipment. The supplier would also provide supervision for the assembly and fitting as well as training local staff. The project's main target was to improve the inadequate combustion techniques used in Chinese coal-fired power plants. The scale of coal burning in China is such that, at the time of the visit, it was responsible for 10 per cent of the sulphur and nitrogen oxide emissions in the world. This is the result of reliance on conventional engineering designs combined with fast economic development. The Chinese National Environmental Protection Agency indicated that the 0.7 per cent of China's GDP allocated for environmental and ecological improvements would need to be doubled merely to keep pollution at its present level. With the donation of the Low NOx burners, the Dutch Government wanted to demonstrate one of the available potential solutions to the problem.

The project's immediate aim was to reduce NOx emissions in the short term through the installation of 12 Low NOx burners at a power plant, targeted to reduce the emission of Nitrogen Oxides by boilers equipped with the burners by 60 per cent. The medium-term objective is to develop Chinese industrial capacity to produce efficient Low NOx burners locally.

The Chinese were offered this project with 100 per cent ORET funding. No proper appraisals were made regarding commercial, technical, financial or economic viability, and demand was not analysed. The project was finalised some 44 months after signature of the contract instead of the 18 that had been planned. Firstly, it took time to find an end-user willing to accept the demonstration burners. Then it took a long time for this end-user to react to design proposals and many technical questions had to be extensively discussed, requiring extension of the grant offer by six months.

The Low-NOx burners have been adequately installed and are fully operational. The burners are of excellent, proven quality and easy to operate. They are suitable for coal and gas firing in medium-sized boilers. These can burn at half-load when demand is low, but they require slightly more inputs. Managers at the Gaojing power plant have confirmed the smooth running of the boilers with Low-NOx burners. They indicated that no fuel economy could be reached as the boilers need more combustibles on the one hand but, on the other hand, can burn at a lower capacity when demand is low (50 instead of 70 per cent).

The demonstration effect of the boilers is low, however, as there is so far no legal requirement by Chinese environmental law for their installation.

4.1.2 *Description of MILIEV study project*

Yunnan environmental masterplan

The South Yunnan Plateau Lake Region is a high plateau in the south of Yunnan province, in the upper watershed of the Pearl River. It is an important base for agriculture, light industry and tourism. The rapid economic growth of the lake area has been accompanied by significant degradation. Domestic and industrial waste water are discharged into the lakes without treatment and unsustainable use of land and water has led to serious land erosion. The pace of environmental degradation already significantly hampers the socio-economic development of the region through: (i) reduced availability of clean water (for industrial, agricultural and domestic use); (ii) problems with urban drainage, water collection, sewerage treatment, solid waste management; and (iii) an increasing level of industrial pollution.

The Yunnan authorities attach particular value to projects through which to improve the environment and several such projects are being implemented. The World Bank is co-financing a programme of projects located in Kunming City, Qujin City and Gejiu City.

These mainly concern waste water treatment and other treatment plants, the related sewage network, water supply, and the strengthening of environmental management. The British Overseas Development Agency (now: DFID) is financing a sanitation project in Kunming aimed at alleviating water quality problems in Dianchi Lake. The Yunnan Government is committed to set up an environmental management system and a series of projects focusing on four connected lakes (Qilu, Xin Yun, Fuxian and Yilung).

Appraisal of the project was a lengthy process. The original project proposal focused on a group of six lakes. This was considered as too broad in scope; moreover, the socio-economic and hydrological relationships between the lakes was judged too weak for an integrated project. A modified version, submitted in June 1995, was rejected and a new project proposal was prepared and submitted in June 1996. The scope of the project had been narrowed down (five lakes were covered) but many drawbacks were still identified. Ultimately a fourth project proposal omitted the fifth lake which had too many individual characteristics that set it apart from the others.

The present project is defined as the preparation of an integrated environmental master plan (IEMP) and consists of six aspects to be dealt with in five phases by six task groups. The aspects to be considered are dredging, monitoring, mathematical modelling, industrial and urban pollution in catchment areas, agricultural pollution and master planning. The project includes phases for data collection, diagnosis, analysis, master planning and review. The task groups constituted are for dredging, monitoring, modelling, industry, agriculture and master planning. The main objective of the project is to reverse past abuses to which the four lakes have been subjected, such as lake shoreline deforestation, deforestation and erosion in the lake basin and water pollution. Through lake restoration and protection as well as the transfer of technology, the project should help to prevent loss of the life support system of the local population of the High Plateau Lakes. As a secondary objective it is to be used as a pilot project, setting an example for the other High Plateau Lakes.
The Masterplan project is fully operational, and proceeding according to plan. At the time of the visit, three phases had been completed (data collection, diagnostic and analytic phases) and the six task groups had been set up. A baseline Data Report has been published and a project launching workshop has been organised. Maps have been digitalised and a Data Review Report per lake basin has been prepared. For each lake, Diagnostic Reports have been prepared, followed by detailed workplans. A Monitoring System/

Database has been implemented and an Emission Analysis completed. A Decision Support System has been developed for Fuxian and Qilu lakes.

Cooperation and enthusiasm for the project shown at the provincial, prefectural and county levels are promising, as is the motivation of the counterpart staff. Some difficulties are experienced with the disbursement of counterpart funds and delivery of equipment.

4.1.3 *Description of MILIEV sanitation projects*

Water treatment Chengdu, China

With a population of close to 1.8 million, greater Chengdu is the political, economic and cultural centre of Sichuan Province. The drainage system and sewage treatment capacity for the greater part of the city, however, is inadequate. Sewage is discharged into three rivers flowing through the city. The expansion of irrigation in the area restricts the base flow of the rivers in the dry season and they therefore contain a considerable quantity of sewage. The pollution of river water continues to increase year by year. In the early 1980s, to counteract these negative developments, the Chengdu Government produced an 'Urban Sewerage Engineering Plan'; this was adjusted in 1986 and provides a framework for the expansion of sewerage capacity.

The project has three main objectives. First, to reduce local river pollution by increasing sewage treatment capacity in Chengdu and treating 40 per cent instead of the current 10 per cent of the sewage, thereby obtaining environmental improvements in terms of high effluent quality. Secondly, to substantially improve the health of the Chengdu and downstream populations. And thirdly, for the Chengdu Sewage Treatment plant to gain experience with modern technologies.
The plan projects the construction of a large plant in four phases. The first phase (the Shizishan sewage plant at San Wa Yao), with a capacity of 100,000 cubic metres per day, was completed in 1991. The second phase, the object of the current project, will result in the construction of a sewage treatment plant of a biological process type with a daily capacity of 300,000 cubic metres. With the third and fourth phases the total capacity of the sewage treatment plant will be brought up to 700,000 cubic metres per day. In the longer term (at horizon 2020) the Chengdu Government aims to increase sewage treatment capacity to 2,210,000 cubic metres per day.

The second development phase comprises a primary sedimentation tank, an aeration tank and a secondary sedimentation tank. After passing through these tanks effluent is discharged into the Fuhe river. The sediment particles that settle in the tanks are treated in the sludge digestion tanks. What then remains is dry sludge (used for landfill), fertiliser and biogases which are used for electricity generation at the sewage treatment plant. The project covers process technological knowhow and equipment in connection with the engineering and construction of the second stage of the San Wa Yao sewage treatment plan and the main outlet from the plant to the river. More specifically it includes the engineering, design capacity, mounting of the equipment, project management, training, supply of spare parts and maintenance schedules, as well as technical support after commissioning.

The contract for the project was signed in June 1995, but the first shipment did not take place until February 1998. Target for finalisation is now set for end-1999. The delays resulted from disagreements with respect to the control system, quality and technical details, and the late arrival of technical equipment. Differing views held by Dutch and Chinese institutes with regard to plant design have been time-consuming, whilst discussions with regard to the choice of spare parts are still ongoing. Construction of the plant is now progressing smoothly and is at an advanced stage; test runs are expected to take place at the end of 1999. The supplier and client have a good relationship and problems

with respect to design technology, appliances and equipment are now resolved smoothly in 'design liaison meetings'.

The plant will reduce nitrogen and phosphorus levels with tried technology. A performance guarantee together with the proven technology, makes it reasonable to assume that the plant will achieve its targets and hence will reduce river pollution and improve public health. A by-product, bio gas, will reduce energy costs. Engineering assistance, training and performance guarantee will ensure the project's technical sustainability. An adequate quantity of spare parts has been supplied on the basis of earlier experience. The project presently employs 300 staff for construction. A third plant is already being planned, which will create more employment or will retain the temporary workers working on the present plant.

Economic benefits arise primarily from the expected improvement of sanitation, such as the reduced breeding of insects, reduced river pollution, no more use of contaminated irrigation water by farmers around Chengdu, and reduced pollution of groundwater. Hence, the health of people living downstream from Chengdu is improved, the costs of producing drinking water are reduced and there is less risk of epidemics. Sludge can be used for fertiliser production. These benefits have not been quantified, however. Potential economic benefit has been assessed on the basis of the user's willingness to pay (4 per cent of income for water and sewerage, 1 per cent for sewage), which is quite high for China (Yuan 0.55 in future compared to yuan 0.12 now, guaranteed by government). Local authorities have indicated that sewage discharging fees will be increased, probably doubled.

Reporting by the supplier is far too succinct to allow the true progress of the project to be assessed, whilst the appraising consultant had little time for this complicated project. Only an appraisal desk study has therefore been carried out.

Banknote briquetting, India

As a result of its people's preference for cash, India is one of the countries in the world with the highest number of banknotes in circulation. In 1995 they totalled 28,000 million and this is expected to increase to 61,000 million by the year 2000. Such a fast-growing volume poses serious problems with respect to production, the supply of fresh notes to

the public, and the withdrawal of unserviceable notes from circulation. In the past, the annual withdrawal rate was around 5,000 million, but this is expected to double by the year 2000. The Issues Office of the Reserve Bank of India sorts soiled banknotes into re-issuable and non-issuable notes. The latter will eventually be destroyed. When the project proposal for banknote briquetting was submitted in 1993, a backlog of some 331 million notes was awaiting destruction. Traditionally, RBI has destroyed the notes through incineration in conventional single-grade ovens. In this process, kerosene was poured over the banknotes which were then ignited. The resulting combustion at a low temperature was slow, incomplete and highly polluting (fumes, dust and the emission of heavy metals). After burning, the ashes were screened and the residue disposed of on refuse dumps, leading to soil pollution. Pollution laws in India now prohibit the incineration of banknotes by such conventional methods. The Environmental Protection Agencies are strongly opposed to the use of conventional incinerators and have closed those at the RBI Issues Offices in Calcutta. In 1994, in an effort to dispose of banknotes in an environmentally friendly way, the RBI invited tenders for the supply of technologically-advanced disintegration systems for New Delhi, Bombay and Calcutta. The technology sought by the RBI would produce an end product in the form of briquettes which, under special conditions, can be recycled by the paper industry or used as fuel.

The banknote shredding and briquetting system is a pilot project on a turnkey basis. If successful, it could lead to substitution of the 15 remaining conventional incinerators that are currently used for the destruction of non-issuable banknotes in India. It covers the installation of four shredding and briquetting systems, each with a nominal capacity of 300 kg/hour. The supplier and his local agent in India provided training at a similar plant in the Netherlands, as well as on-the-job training during installation. They also continue to provide assistance for major maintenance on the basis of separate maintenance contracts. The project's short-term objectives were to replace two conventional banknote incinerators in Mumbai and Calcutta with four modern shredding and briquetting systems in order to improve the efficient disintegration of banknotes and to reduce the pollution level of the conventional disposal operation. The long-term objective was eventually to replace all conventional incinerators at the 15 remaining Issues Offices in India with shredding and briquetting systems.

The four systems have been installed and are functioning smoothly. They seem over-designed in that their capacity exceeds the daily need for banknote destruction. At the

time of the site visit, one of the two systems in Mumbai was dismantled for deployment elsewhere. The quality of the four machines is excellent; the technology is proven and a warranty for 12 months has been given. Spare parts have been provided for two years, and service and maintenance is provided by the supplier's local engineers. The supplier has an agency in New Delhi, staffed with four local people, including one mechanical and one electrical engineer trained by the supplier. This office aims at further opening-up the Indian market: the local office assembles, installs and services the delivered installations. The Bank of India has issued a tender for more disintegration systems, albeit of a smaller capacity.

So far, only the security problem of storing and transporting large quantities of banknotes has been structurally solved. The disposal of briquettes presents the same environmental problem as that of banknotes, as all ink and metals are still lodged in them, albeit highly polluting destruction through pulping and incineration have now been abandoned. The briquettes are now used for landfill in Mumbai, whilst they are processed into paper boards in Calcutta. The supplier is actively involved in developing methods by which to recycle the briquettes into new products.

Banknote briquetting, China

One of the tasks of the People's Bank of China (PBOC) is to destroy banknotes that have been taken out of circulation. Traditionally this was done by steaming and boiling the notes in a papermill. This is neither a safe nor an environmentally friendly process. With the introduction in September 1996 of much stricter controls on the paper industry's sewage by the SEPA (State Environmental Protection Administration) and the resulting closure of some 400 small papermills, PBOC has lost 80 per cent of its past capacity to treat used banknotes. The virtual stoppage of the currency destruction has caused worn and false banknotes to flood the market, but effectively stemmed the practice of chemical de-inking.

In 1996 some 20,000 tons of used notes had to be destroyed; by the end of the century it is expected that the required annual destruction will be in the tune of 36,000 tons. PBOC has actively sought ways by which to dispose of discarded banknotes in an environmentally friendly manner. It contacted some of the world's leading manufacturers of used banknote disintegration machines. As a result of the ensuing commercial negotiations,

PBOC placed an order in the Netherlands for the installation of 18 currency disintegration and briquetting systems. In a later phase this was increased to 19 systems to compensate for the high price levels identified during appraisal. Ultimately, the order for the 19th system was converted into an on-line shred discharge and briquetting system.

The project aimed at reducing water pollution caused by the conventional chemical process for de-inking banknotes; reduction of air pollution caused by combustion of banknotes at low temperatures in installations not equipped to filter the noxious gases; reduction of safety risks linked to the storage and long-distance transport of large quantities of banknotes before destruction; reduction of the spread of infectious diseases through the use of old banknotes, and improvement in the labour conditions of workers employed in the destruction process.

The banknote shredding and briquetting system have been installed and are functioning according to their design capacity, with a 95 per cent demand availability per month. Some problems have been encountered due to the short life of knives, to the power standard and to sensitivity to ambient temperature changes. The supplier's local service company has sorted out these problems, as its engineers were closely involved in installing and maintaining the systems. Ultimately, some 209 persons will be directly employed by the systems; more employment could be created if the bank should decide to produce board plates from the briquettes and if local production of spare parts would be started.

Security problems have been adequately solved by the briquetting machines. The Peoples Bank of China is presently contemplating the procurement of 27 additional units for banknote shredding and briquetting. The Dutch supplier stands a good chance of winning this contract, and is at present engaged in developing technology for recycling the money briquettes into boards. PBOC has already sent three delegations to the Netherlands for this purpose and plans are being developed to install a pilot plant for board production in China.

4.2 Development effects of MILIEV projects

MILIEV projects are judged primarily by their effect on the environment; their contribution should be positive. With regard to poverty alleviation, the effects should at least be neutral. MILIEV projects have also been assessed in terms of the creation of permanent and temporary employment, technical and financial viability, and their possible wider effects on the economy.

Table 4.2 Development effects of MILIEV projects[1]

Project	Country	(Expected) direct employment creation		Lack of negative effects on the poor	Environmental effect	Expected viability		Expected wider effect on economy
		Perm.	Temp.			Technical/ managerial	Financial[2]	
Energy								
Wind Tamil Nadu	India	48	n.a.	+	+	+	+	+
Wind Hui Teng Xi Le	China	6	85	+	+	+	0	+
Wind Ramagiri	India	15	75	+	+	+	+	+
Biomass briquetting	India	4	16	+	+	+	+	+
Low NOx burners	China	0	0	+	+	+	n.a.	+
Studies								
Yunnan Master Plan	China	0	30	+	+	+	n.a.	+
Sanitation								
Water treatment	China	n.a.	300	+	+	+	0	+
Banknote briqueting	China	209	675	+	+	+	-	0
Banknote briqueting	India	6	3	+	+	+	-	0

1 *See chapter 3.4 for an explanation of the scores.*
2 *See also annex 4: summary table on financial viability. Scores based on (expected) income generated by the project. In all cases with a zero or negative score, a guarantee has been obtained for repayment of the loan.*

All but two projects have an immediate effect on employment as new and permanent staff have been or will be hired. The biomass briquette project and the water treatment plant in Chengdu are not yet operational and their rating is therefore based on expectations. For Chengdu the indications are firm as plant construction was progressing well and the recipient organisation has shown its competence in managing such treatment plants. In the case of the biomass briquetting, the project shows definite potential, but is not advanced enough to guarantee the full employment effect, although some new staff have already been employed to operate the first units. The Low NOx burners in China and the banknote briquetting equipment in India are operated by existing staff. Most projects created temporary employment opportunities during the construction phase.

MILIEV projects not are expected to have adverse effects on the poor or on women. All projects score positive in this regard as no such adverse effects could be identified. In the case of wind parks, the effects on the poor can be rated as particularly positive as they already experience direct benefits in terms of new connections, stabilised power supply and some new employment. In the case of the Yunnan master plan and the water treatment plant, it is expected that the poor will also experience direct benefits in terms of access to clean water and reduced adverse effects of pollution.

MILIEV projects are selected and designed to improve environmental conditions in the recipient country. All projects scored positive in this regard. The projects that are not yet operational can firmly be expected to contribute to a better environment once they become active. The energy projects all offer clean alternatives to coal burning, or reduce its noxious effects, whilst the sanitation projects are mainly geared to reducing water pollution. The master plan has already raised environmental awareness in South Yunnan and is expected to attract donations for new environmental projects.

The managerial viability of all projects is rated positively as all recipient organisations have shown that they are able to handle and maintain the deliverables. Financial viability is mixed, albeit all projects have received sufficient guarantees that the loans will be repaid (either by government or government organisations). The wind turbines in India are already generating a flow of revenue to the investors. Also, biomass briquetting is expected to generate a direct income flow should it become fully operational. The wind park in China is part of the government system and prices for its electricity have not yet been raised, hence it is not possible to offset investment costs with its own revenues. The

same applies to the water treatment plant: direct revenues are not sufficient to realise financial viability, but sewerage charges are increasing. The banknote briquetting machines do not generate any revenue being used predominantly for the destruction of banknotes that were formerly pulped or burned. Such practices are now banned by law because of their adverse effects on the environment. Methods have been developed by which to recycle banknote briquettes into various products such as boards, floors and wall panels. Should these methods be adopted by the respective banks, the briquettes may generate sufficient extra income to at least partly offset investment costs. The Low NOx burners were a gift to the Chinese government and do not generate immediate income; therefore, their financial viability has not been assessed.

The ORET/MILIEV projects are expected to improve conditions for economic development and aim to create indirect employment opportunities. Although the impact of recently finalised projects and those that are not yet operational cannot be established with full certainty, some assessments have been made on the basis of site visits, observed project performance, interviews, visible short term effects and file studies. The windmill projects are expected to have positive effects on economic development, particularly in their immediate surroundings, as they stabilise electricity supply and provide opportunities to extend the electricity grid into remote regions; they also reduce the noxious effects of coal burning and enhance the chances for local production of the towers and eventually (parts of) the turbines. The environmental master plan is well on its way to become a recognised guide for prioritising investment in South Yunnan. The first signs of attaining its main objective, i.e. reversal of rapid pollution processes and thus improving the life support system of the local population, are already apparent. The water treatment plant in Chengdu will have a substantial effect in terms of reduced pollution levels of ground and river water, which will have a lasting mitigating impact on the present incidence of water-borne diseases, epidemics and the breeding of insects. The wider impact of biomass briquetting is potentially positive. Crop residues are now being burned in the fields, a wasteful practice because the burning of loose biomass pollutes the air and brings no gain to the farmer. Screw extruders, however, have to compete with familiar piston presses which deliver a lower quality briquettes; hence, the success of the project is as yet not absolutely certain. The wider effects of banknote briquetting are restricted to the long-term prevention of adverse environmental effects of burning and pulping. Structural employment opportunities could arise when briquettes are recycled in future; the Chinese have already developed serious plans in this regard.

4.3 Export relevance of MILIEV projects

The export relevance of MILIEV projects is measured by their contribution to the Dutch economy in terms of sourcing of goods and services in the Netherlands, the number of person years of employment generated, client satisfaction, and the chance for further deliveries.

Most clients have expressed satisfaction with the quality of the deliverables, which are mostly seen as of the highest standard. Only in the case of biomass briquetting machines and the Low NOx burners did the recipient have some reservations. Although not one unit of the biomass briqueting machines has yet been fully installed, some comments have been made by the operating company. The screw extruders for biomass briquettes produce high quality briquettes, but the machines require much maintenance; in particular the screws require a daily recoating for the briquetting of mustard seed. The support equipment, such as hoppers, conveyers, ventilators etc., is considered very expensive and the project has acquired Indian-made equipment instead of Dutch materials, as stated in the contract. The Low NOx burners have met with satisfaction as far the reduction of emissions is concerned, but are reported to require more coal. This is offset by the fact that they can burn at half-capacity, unlike conventional burners. They are also considered costly, reducing the chances of their procurement as long as the installation of Low NOx burners is not required by law. The water treatment plant has not yet been commissioned; hence, a final conclusion on client satisfaction is not possible.

Table 4.3 Export relevance of MILIEV transactions[1]

Project	Country	Dutch sourcing (%)	Person years	Client satisfaction	Present chances of further deliveries
Energy					
Wind Tamil Nadu	India	63.2	4.5	+	+
Wind Hui Teng Xi Le	China	63.0	n.a.	+	+
Wind Ramagiri	India	77.3	n.a.	+	+
Biomass briquetting	India	92.8	20	-	-
Low NOx Burners	China	67.0	5	-	-
Studies					
Yunnan Master plan	China	63.0	13.9	+	+
Sanitation					
Water treatment	China	70.0	21	n.a.	+
Banknote briqueting	China	77.0	n.a.	+	+
Banknote briqueting	India	64.5	256	+	+

1 *See chapter 3.4 for an explanation of the scores.*

Grants disbursed to the projects listed in Table 4.3 under MILIEV totalled NLG 61,450 million, and generated a total transaction value of NLG 111,756 million, of which NLG 75,962 million, or 68 per cent, was sourced in the Netherlands. Approx. 300 person years of employment were generated in the Netherlands. A reservation needs to be made with regard to the figures for biomass briquetting as the mission found predominantly foreign materials in the first batch, and the final figure may turn out to be close to 60 per cent. The chances for further deliveries are in principle positive for the producers of windmills, as there is continued (private) demand and incentives are provided by government. The suppliers either have joint ventures (India) or a local service centre. The projects have benefited from MILIEV grant levels of up to 60 per cent, however, and from the possibility to deal directly with private entities. Since MILIEV merged with ORET and conditions have been synchronised, these possibilities have been eliminated. Under present circumstances it seems wellnigh impossible to get further funding, as a 35 per cent grant level and the impossibility of dealing with private entities may limit chances to extend some existing wind parks in China. Furthermore, it is difficult to realise the mandatory percentage of Dutch sourcing if, in order to offer more competitive prices, many of the towers and turbines are produced locally. The 60 per cent condition thus has an upward effect on prices as some 'forced' production would have to take place in the Netherlands.

The supplier of biomass briquetting machines has formed an Indo-Dutch joint venture company with CMS Energy Systems (Pvt), formalised in 1995, with the objective of marketing some 100 extruders in India after completion of the pilot project. There is a real demand for biomass briquetting, but the outcome of the pilot project is not yet assured. The local piston presses are cheaper and require less daily maintenance as compared to screw extrusion. However, their breakdowns are frequent, their productivity and the combustion quality of the briquettes produced is lower. Nevertheless, potential end-users have yet to be convinced of the advantages and commercial attractiveness of screw extruders. The chances for further delivery of Low NOx burners seem bleak as no interest has yet been discerned and China claims already to master the required technology.

The development of a master plan in Yunnan will require a number of follow-up projects, provisionally estimated to cost some NLG 200 million. These comprise dredging and land reclamation works, monitoring equipment, computers and computer software, water supply and distribution works, urban drainage and sewerage systems, and waste water treatment plants. These requirements will provide scope for further Dutch involvement as Dutch suppliers are already active in these fields in China.

The water treatment plant in Chengdu represents a stage in a larger plan to extend water treatment capacity to over 2,000,000 cubic meters per day. This will require an additional five sewage treatment plants. The supplier is well-positioned to bid for these further works.
The supplier of the banknote briquetting machines aims at further opening-up the Indian and Chinese markets and has local service offices in these countries. Both the Bank of India and the People's Bank of China are now considering the procurement of additional units for banknote shredding and briquetting. The Dutch supplier has a good chance of winning the contract and may be involved in the processing of briquettes into boards.

4.4 Efficiency of MILIEV projects

The efficiency of MILIEV transactions is measured by the price paid for the goods and services and by the length of the appraisal and implementation process in relation to plans and expectations. Price issues are also discussed in Chapter 8, where management issues regarding the ORET/MILIEV programme are discussed.
The quality of the deliverables was generally high and the price/quality ratio was reasonable in all cases. Appraisal files show that prices or profit margins that were too high had to be corrected by the supplier before approval was given. A double check on prices and profits for some projects has confirmed that they had been well scrutinised.

Table 4.4 Efficiency of miliev projects1

Project	Country	Price/quality	Duration of project cycle
Energy			
Wind Tamil Nadu	India	+	-
Wind Hui Teng Xi Le	China	+	+
Wind Ramagiri	India	+	-
Biomass briquetting	India	+	-
Low NOx Burners	China	+	-
Studies			
Yunnan Master Plan	China	+	-
Sanitation			
Water treatment	China	+	-
Banknote briqueting	China	+	+
Banknote briqueting	India	+	+

1 *See chapter 3.4 for an explanation of the scores.*

Energy

The Tamil Nadu wind farm project has experienced delays due to funding problems in India (liquidity shortages in the market) and a last-minute change in the project location. This has not affected the quality of the project, however. The Mongolia wind project progressed smoothly and experienced no particular delays. In the Ramagiri wind project there were no particular delays in the project appraisal, but they were incurred in implementation. Six months were lost when the location was changed from Gojiness (Gujarat) to Ramagiri (Andhra Pradesh). Further delays occurred when locally-sourced supplies were late and the Andhra Pradesh Electricity Board took a long time to link the wind park with the high tension distribution network.

The biomass project experienced delay in the approval period because it was initially considered to be commercially viable. When project costs were reduced to under SDR two million, approval was granted. Implementation was held up as it was decided first to build a pilot plant in Bharatpur before the other five locations were selected. Reporting by the supplier is inadequate, which is unfortunate given the doubts with regard to the Dutch component and the efficacy of the technique. The Low NOx project was approved fairly quickly, but many months were lost in finding a company that was willing to have the burners installed for demonstration purposes.

Studies

The Yunnan Master Plan project was conceived in 1993 but did not start until 1998. This long gestation period reflected the problems regarding the scope of the project, the non-availability of data, and the lack of local funds. Appraisal of the project, notwithstanding its unique and complex character, was limited to a desk study, although a technical field visit would have greatly assisted in assessment of the appropriate magnitude and specific coverage of the project.

Sanitation

Appraisal and implementation of the Chengdu treatment plant have both been subject to delay. The appraisal lasted some two years as the local competent authorities took a long time to grant the necessary approvals. Delays were incurred in implementation due to dif-

ferences regarding technical details and designs. Here, too, a more thorough field appraisal could have prevented some of the problems. The banknote shredding projects in China and India have been executed smoothly and without much undue delay.

4.5 Issues

The wind farm projects have been appraised on the basis of desk studies. An application for several projects in one sector would merit field appraisals and a study of the possible wider economic benefits. An attempt should have been made to study the quantification of economic damage resulting from coal burning. This would also have benefited the biomass and Low NOx projects. Very complicated and relevant projects, such as the Yunnan Master Plan, would also have benefited from field appraisals.

The wind projects are in a peculiar situation. Their construction price could be lessened through the local production of parts, but the 60 per cent condition prevents such an arrangement. Wind projects, particularly the first on a site, require substantial investment as the basic infrastructure needs to be set up. The merger of MILIEV and ORET has brought the high concessionality levels of MILIEV in line with those of ORET, at present 35 per cent, and grants can no longer be extended to private companies (as was the case in India). The present projects would not have been feasible under these new conditions. There is no indication that these effects were foreseen when the merger was decided upon.

Problems encountered in relation with the disposal of money briquettes were foreseen during appraisal, but warnings in that regard were not heeded. The temporary solution may be regarded as an (unquantified) benefit to the environment, but the solving of a security problem could have been funded from the own resources of the respective Central Banks. The economic viability calculation carried out for this project was inadequate as the cash flow stream was taken as an economic stream of benefits, whilst no attempt was made to quantify the benefits of reduced pollution.

The expected commercially viability of the biomass projects was no obstacle to MILIEV funding, as their value was below SDR two million. Further justification could be found in the fact that the new technique is not yet accepted in India: it is more expensive and its higher effectiveness as compared to conventional techniques, has yet to be demonstrated by the owners.

The short visit to the biomass project revealed that most of the equipment was of Indian rather than Dutch origin, making a general case for more intensive monitoring during implementation.

5 Evaluation ORET: Public Services

5.1 Description of selected projects

The initial investments for public-service projects are usually high, while revenues remain either below cost price (drinking water and electricity) or are virtually non-existent (health care). The scope to increase public utility prices is often restricted in view of the purchasing power of recipients, the low quality of services traditionally rendered, and institutional problems with regard to fee administration and collection. Improved public services usually have a fairly direct impact on their immediate beneficiaries in terms of improved health, better sanitary conditions and access to utilities such as electricity. Better quality of services is also a precondition for raising water and electricity fees and for retaining qualified staff in public health care facilities through increased remuneration and the use of improved technology. Improved public services are frequently the subject of development projects and programmes, but recipient governments sometimes prefer ORET-like funding constructions which allow them to follow their own timing and priorities.

The main recipient countries of projects for public health, water supply and electricity generation and distribution are China, Ghana and India. The list of health and energy projects is characterised by a few Dutch companies exporting to a variety of countries, whilst that of drinking water projects shows a larger number of companies, exporting mainly to China and Ghana.

The field study of public-service projects supported by ORET comprised visits to nine projects in three countries; all selected projects were larger than SDR 2 million. An overview of visited projects is given in Table 5.1 below; a complete overview of projects in these categories is provided in Annex 3 of this study.

Table 5.1 ORET: overview of public-service projects selected for field visits* (amounts in NLG millions)

Year of approval	Sub-sector	Transaction amount	Grant amount	Country	Project status
	Health				
1995	Health care Gujarat	99,600	39,826	India	Ongoing
1994	Diagnostic equipment	48,373	19,349	Ghana	Ongoing
1992	Vaccine cleanrooms	21,343	8,537	China	Finalised
1995	Hepatitis-A project Kunming	7,900	3,160	China	Ongoing
	Water supply				
1993	Drinking water	29,973	11,989	Ghana	Finalised
1993	Drinking water Nanchang	16,366	6,546	China	Finalised
1993	Drinking water Zhangjiakou	9,790	3,916	China	Finalised
	Energy				
1993	National electrification	61,122	24,449	Ghana	Ongoing
1992	Switchgear	10,699	3,920	India	Finalised

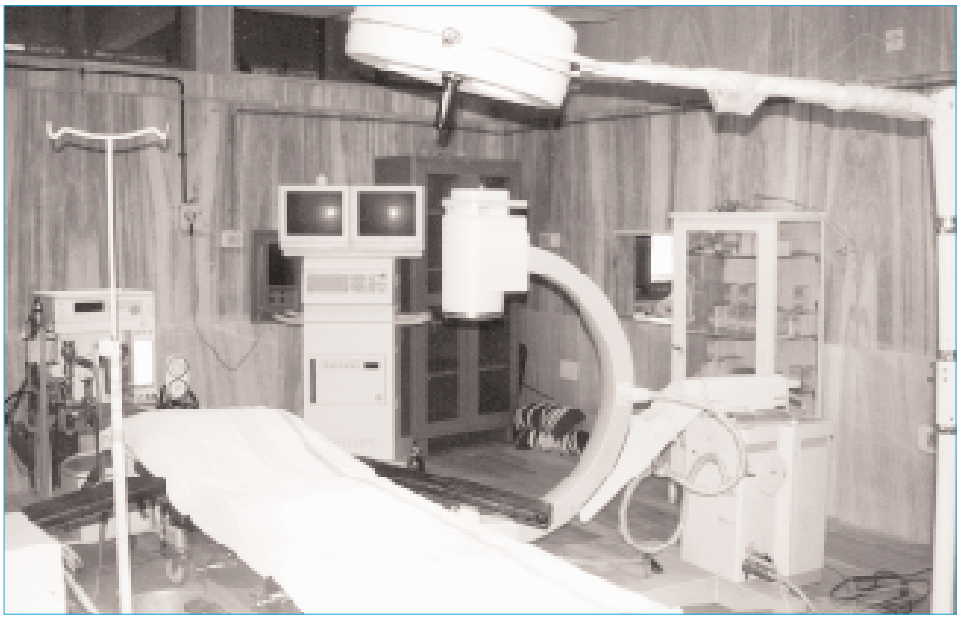
* *See maps on page xii through xv for project locations.*

5.1.1 ORET health projects

Health care Gujarat, India

The State Government of Gujarat is committed to make health and medical services available to all Gujarati citizens. The health care system consists of state hospitals and a number of privately-owned hospitals. The latter are mostly not accessible to less privileged patients as they are small-sized and profit-oriented. The structure of the public health system in Gujarat State consists of three levels:

- the primary level with some 1,000 centres and more than 7,000 sub-centres providing basic health services;
- the secondary level with some 200 Community Health Centres, 25 Regional Hospitals, 24 District Hospitals and a limited number of smaller hospitals;
- the tertiary level with six referral hospitals affiliated to a Medical College.



Development of the primary health care level has for years been given the highest priority both by the Government of India and the State Government of Gujarat. This sector is therefore relatively well staffed and equipped. The ORET-supported project aims to develop the intermediate or secondary level hospitals in the State of Gujarat: upgrading the delivery of health care in semi-urban and rural areas by providing medical equipment. Existing intermediate facilities at the secondary level are to be improved and sustainability of this equipment is to be ensured through a package of training, guaranteed maintenance and after-sales services for a period of five years. The training component includes technical, application and medical training.

The key objectives of the project are to boost the quality of health care for the poorest part of the Gujarati population by improving the health care infrastructure and providing specialist training to doctors and surgeons. Four areas in particular are targeted: mother and child care (four referral hospitals, 22 district hospitals and 30 Community Health Centres), traumatology (four referral hospitals, 20 district hospitals), urology (three medical college-affiliated district hospitals), and ophthalmology (the Institute of Ophthalmology to coordinate mobile units). The project also emphasises hospital hygiene and infection control by providing sterilisation systems and blood banks.

Implementation of the health project in Gujarat has started in 1998, after a long gestation period: appraisal was a lengthy process as the project comprises a great variety of small and large equipment, training proposals, and covers various medical disciplines. Moreover, changes in the Gujarati government and uncertain financial arrangements between the Central Government of India and the state of Gujarat caused long delays. Equipment is now being installed in the various Community Health Centres; training courses are being set-up and already attract such external interested parties as medical students; blood collection and storage is being improved; posts are being created and vacancies are being filled. In Gandhinagar a referral hospital has been equipped on a pilot basis. Poor patients are given free treatment in all hospitals. The Gujarati authorities are much involved in the project and provide full support.

The main expected advantages of the Gujarati health project are: better distribution of the patient load over existing hospitals, job creation, reduction of transport costs for patients who would no longer need referral to tertiary hospitals, and a general economic gain through reduced mortality and morbidity of the poor who get free treatment. If no major problems occur, the Gujarati health project will meet its targets in terms of reduced maternal mortality, maternity-related diseases, and perinatal mortality; and better treatment of trauma cases from various accidents, ophthalmologic cases and kidney diseases. A problem could arise through the shortage of qualified staff at the level of Community Health Centres: this may lead to sub-optimal use of the equipment. The proposed medical equipment meets a real need in Gujarat, but does not address the chronic shortage of staff able to use the apparatus. The actual arrival of new equipment may increase the retention rate of capable staff, but at the level of community health centres the problem of attracting trained staff may be persistent. Additional training is foreseen for hygiene, sterilisation, bloodbank management, and bacteriological control. Sufficient attention is given to the disposal of solid hospital waste.

Some 200 workers will be employed for construction and installation, and 30 technicians will man a service centre for equipment. Another 688 posts for medical, paramedical and support staff are expected to be created. The Gujarati government actively supports the project, thus enhancing the chances of sustainability as government will have to ensure the financial viability of the medical equipment, the servicing of the loan, and maintenance costs after five years. These burdens are not unduly high for the Gujarati government and have been anticipated in the budget.

Diagnostic equipment, Ghana

The Government of Ghana attaches high priority to its public health care, and this is reflected in its recurrent expenditure budget. Compared to countries with a similar GNP, Ghana's health expenditures are above average. Priorities of the health authorities are Primary Health Care and health care at the District level. A major bottleneck at the district level was caused by the radiological equipment, which was very old, of poor manufacture, and 80 per cent derelict. The rooms for radiological equipment were unsafe for the operators as well as patients, and particularly for pregnant women.

Several donors and NGOs provide support to Ghana's health system, including radiological equipment supplies, but these activities are rather small-scale. In its health policy the Government of Ghana gave preference to the ORET-funded project 'Diagnostic Equipment Ghana', because this supports its country-wide health project, aiming at providing each of the 110 districts with a fully-equipped hospital, including X-ray equipment. The incidence of ante-natal problems and TBC is very high in Ghana. After malaria, TBC is the largest health hazard in Ghana, and loss of life and active life years is consequently high. The availability of diagnostic equipment at district hospitals, resulting from implementation of the project, should relieve pressure on regional hospitals and teaching hospitals and reduce travel time for the patients. The availability of fully-facilitated health centres in their district should improve quality of life for the poor who may be unable to travel to regional hospitals. Those poor who are 'declared pauper', TBC patients, children under five and elderly above the age of 70 will get free treatment and incur less (travel) cost to obtain treatment. The ultra-sound equipment is particularly beneficial to women.

The project aims at the rehabilitation of X-ray rooms for a total of 95 health facilities; the installation of diagnostic imaging equipment; training of available X-ray technicians, and the maintenance and repair of equipment. The equipment is to be of high standard quality and much attention will be given to ease of use (mobility, stability, security, radiation, hygiene).

The project, first submitted in 1994, is ongoing. Many delays were incurred: changes of specifications, delayed signing of the contract by the Government of Ghana and a general currency crisis. The project became operational in 1998. Delays during implementation were mainly due to the lack of power supply. At present, civil works and the installation of

X-ray equipment have been completed in 64 of the 95 health facilities, 46 owned by government and 18 by Missions. Mission health facilities generally receive more outpatients and have more doctors for their treatment. At the time of the field visit, an average of one medical officer was available per health facility. Only Medical Officers are allowed to interpret X-ray images. Out of a sample of 21 facilities in the regions visited (Western, Central, Eastern, Ashanti and Brong Ahafo), the equipment was not used in three cases due to lack of trained X-ray technicians. One X-ray room would soon be demolished, due to general upgrading of the facility. In some seven hospitals, very modest use was made of the facilities due to problems in electricity supply (independent power supplies have now been installed) and to introduction, as they had previously had no such equipment. In the remaining nine hospitals visited, between 1,000 and 4,500 X-rays had been made on an annual basis since 1998: mission health facilities take on average almost 200 X-rays per month, and government facilities some 117 per month. The use of X-ray diagnostics is relatively low in Ghana as compared with other countries in the region: the general utilisation rate of services is only 0.35 per person per year. Ultra-sound systems are operated by a variety of clinical staff including: general practitioners, radiologists, internal medicine specialists and gynecologists.

Of the latest 50 X-Ray images taken in the visited hospitals, more than half were of the Thorax, the remainder being divided over abdomen, skull, spine, legs, arms, pelvis and hystero-salpingo (for infertility cases). The Thorax images indicate the prevalence of bacterial pneumonia rather than TBC. In 1998, some 8,000 new cases of TBC were reported in Ghana, some of which required X-raying as they had inconclusive sputum smear tests. All X-Ray operators received on-site training, but have various levels of experience, ranging from less than one year to 35 years. Some 18 have been trained by the supplier, together with 74 doctors in the use of ultra-sound equipment. The Ministry of Health has prepared a radiographic course at the University of Legon in 1999, to ease the problems emanating from the shortage of qualified radiographers. The technicians indicated that the equipment is easy to operate, and are aware that the supplier will maintain the equipment and provided warranty. So far, only one breakdown has been reported and was repaired within one day by the supplier.

X-ray images cost 8,000 to 12,000 Cedis, depending on the type and whether it concerns a government or mission facility; government hospitals are cheaper. In government health facilities, some 6-10 per cent of patients are exempted from payment as they belong to

the particular groups already mentioned. Such exemptions are rare in mission facilities as they fear that government may not reimburse.

Vaccine cleanrooms, China

In 1986 the World Bank and the World Health Organisation started the rural health and preventive medicine project in China, comprising inter alia the 'China Vaccine Project'. This targeted the reconstruction and rehabilitation of three national vaccine centres for the production of essential vaccines meeting international quality standards. In January 1990 a Dutch firm, as leading party, signed a contract to assist the Chinese Ministry of Public Health in establishing two facilities for the production of 'attenuated Measles Vaccine' (MV), 'Diphtheria-Pertussis-Tetanus vaccine' (DPT) and 'liquid trivalent Oral Poliomyelitis Vaccine' (OPV). Under this contract the Ministry was to be responsible for the construction and installation of three production facilities, located in Kunming, Lanzhou and Shanghai. Local producers, however, could not provide clean rooms that satisfied WHO requirements. A Dutch supplier therefore was invited to bid for the construction of all clean rooms for the 'China Vaccine Project'. In June 1992 he submitted a request for ORET funding.

The ORET-supported transaction includes the supply of clean rooms of internationally-approved standard at three locations, with a total surface of 3,600 square metres for the production of OPV and 6,150 square metres for the production of DPT and MV. The World Bank loan for the 'China Vaccine Project' is funding engineering costs and the procurement of special equipment. The 'China Vaccine Project' should permit the Chinese health authorities to strengthen the production of high quality vaccine, which was the weak link in the early 1990s. It should also help to maintain the high vaccination levels achieved (95 per cent of all children aged one year are fully vaccinated). To this end, the project should help to improve the quality of vaccines, to make their production independent of foreign suppliers, and to reduce production costs by increasing Chinese production capacity. The project aims at the installation of clean rooms required to produce the vaccines at European quality standards (dust-free and at constant temperature). The clean rooms should enable the annual production of 200 litres Oral Poliomyelitis Vaccines, 800 litres each of Diphtheria, Pertussis and Tetanus vaccines and 25 litres of Measles Vaccines.

In the past, the Chinese programme for immunisation was particularly concerned with urban and industrial areas. The clean room project for vaccine production will help to increase the supply of vaccines to such an extent that remote areas can also be serviced in an affordable way. Immunised people increase the economic performance of the country in terms of reduced numbers of working days lost, less expenditure for medical treatment, and a more productive population. The three project sites already employ some 3,900 persons. New employment opportunities for some 280 may evolve from a possible joint venture for the local production of clean rooms. Clean rooms have been installed on the basis of careful planning. Their quality is good and the design is flexible so that they fit different sites and production schemes. The Good Manufacturing Practice Standard of the equipment guarantees the cleaning of equipment with steam rather than chemicals. A cold chain reduces loss and ensures the adequate distribution of vaccines.

The Chinese clean room contract dates from 1992, and is only now in its testing phase. Reasons for delay have included late payment by the Chinese Ministry of Health, delays in delivery by sub-contractors, late delivery by Chinese suppliers, and problems in developing the process technology. The supplier handled the various set-backs competently in the context of an excellent planning model. There are no indications that the production targets of OPV, DPT and MV vaccines at reasonable cost for local use will not be attained. The Ministry of Health, financially responsible for the operation of clean rooms, decided

to keep vaccine prices low. Higher prices would make production financially sustainable but would be disadvantageous for the poor. In relation to the installation of clean rooms, eight Chinese vaccine-production specialists have been extensively trained by the supplier, hence technical sustainability should be assured.

Hepatitis-A, Kunming, China

Hepatitis A is a common infectious disease with a high incidence in China. Vaccines are available from import or local production. Imported vaccines are not affordable for large sections of the population (at the current price of Yuan 350 per dose, given that the average annual labour wage, e.g. in the province of Yunnan, is Yuan 9000). A locally-produced vaccine was developed in 1987 by the Institute of Medical Biology (IMB) in collaboration with the Zhejiang Academy of Medical Sciences. The Ministry of Public Health (MOPH) appraised and approved a live Hepatitis A virus strain and its use in vaccine preparation in 1988. IMB started production of the vaccine on a modest scale in 1992 (200,000 doses were produced in 1996).

Early 1993, MOPH and the State Planning Commission approved a project to establish a new facility capable of producing more than 10 million doses of vaccine per year in Kunming. The project included the construction of a new building, the supply and installation of clean room systems, the supply and installation of equipment necessary for production of the vaccine, the training of local staff in the use and maintenance of clean rooms, and the equipment and training of local staff in batch production and cultivation of a live attenuated Hepatitis A vaccine virus strain.

For the supply and installation of clean rooms, a turnkey contract was concluded in 1996 between the Dutch supplier and the Chinese authorities, with support of the ORET programme. Apart from the supply of clean rooms and air handling units, the contract included the supply of a central monitoring system with which to control environmental conditions in the clean rooms and a process-piping and water system. The supply and installation of additional equipment by another supplier has a bearing on the overall validation of the production facility, as it concerns the quality and timing of training in use of the additional equipment. A training budget was separately provided for the ORET-funded project to provide for operational instruction of the clean room system and to meet GMP requirements (good manufacturing practice). The project falls under direct responsibility

of the Institute of Medical Biology in Kunming (part of the Academy of Medical Sciences and the Beijing Union Medical College). IMB is a government institution under the Ministry of Public Health which is already involved in the 'China Vaccine Project'.

The principal objective of the broader 'Hepatitis A' project is to increase production of a live attenuated hepatitis A vaccine to some 10 million doses a year, sufficient to cover national requirements, provided that it will satisfy European 'good manufacturing practices'. The ORET project provides for the supply of clean room facilities of the highest standard.

The project for the production of Hepatitis A vaccines should cause a significant decrease in the incidence of Hepa A and the number of lives lost to this disease in Yunnan province. The vaccines will substitute for expensive imports (Yuan 350 against Yuan 13 per shot). Only the poorest may not be able to pay the Yuan 3 expected to be charged to guarantee maximum access to the vaccine. The project will directly employ some 140 persons, mainly women. The live Hepa A vaccine, developed in China by IMB, is a new product for which no WHO standards exist. So far no side effects of the vaccine have been determined and the Chinese are very familiar with the production process. The production and handling lay-outs are clear and logical, and production errors can be traced. The production process has to comply with requirements of the Chinese Environmental Protection bureau, which demand the separation of clean water and sewage. The environmental effect will thus be neutral.

The project for Hepatitis was linked to the clean rooms project (same recipient and location in Kunming) and subsequently suffered from similar delays. Project organisation is cumbersome with IMB, the Chinese Academy of Medical Sciences under the Ministry of Health, taking sole responsibility after the guarantee period, The Ministry of Foreign Trade and Economic Cooperation dealing with oretapplications, the provincial Government of Yunnan, and the China National Instruments Import and Export Cooperation signing the contract with the Dutch supplier. The project has so far finished the clean rooms, cold rooms and warm rooms. Once operational, it will not only be able to produce Hepatitis A vaccines, but also other vaccines such as Hepatitis E.

5.1.2 ORET water supply projects

Drinking water in Accra and Tema, Ghana

Rapid urbanisation in Ghana has created vast residential areas around the Accra and Tema Metropolitan Area without any access to clean water. Existing pipelines in Accra, made of asbestos cement, have deteriorated heavily and PVC service lines, which were laid over very long stretches, have caused many leaks. Moreover, PVC lines are easy to puncture for illegal taps. Water losses in the Accra/Tema Metropolitan Area, at a 50 per cent level, are very substantial. The African Development Bank (AfDB) decided to invest in water supply systems for the urbanised areas, but these investments fell short of needs and had to be complemented with systems funded from other sources. The ORET supported project is therefore additional to rehabilitation works already underway.

The project aims at the improvement and extension of existing (deteriorated) water supply systems, in order to meet the rapidly growing need and demand for potable water in the Accra-Tema Region. The project aims particularly at the provision of clean water to 200,000 people in three fringe areas of Accra: Odorkor, Dansoman and Teshie-Nugua, and also to reinforce the technical and managerial capabilities of the Ghana Water and Sewerage Corporation, responsible for water supply.

The project has been finalised according to design and reached its targets. It had to face a very difficult, unmapped terrain but was only three months late and the system had very few initial leakages. This allowed the supplier to use spare pipes for further extension of the system into one slum area. Extensions into the slum areas allowed the installation of yard taps for poorer households: some 40 per cent of potential customers have to rely on yard taps as they cannot afford house connections. The workload related to water carrying has been reduced for the poor and costs have been lowered as they previously had to buy water by the bucket from water trucks. Drains are being constructed in slum areas in order to improve sanitary conditions. Some 350 labourers have been involved in groundwork, overseen by 40 local supervisors. Additional labour is not likely to be needed as present staff of the Ghana Water and Sewerage Corporation is able to manage the water system. Local staff are also able to do all the work involved in laying the new ductile iron pipes which are easy to maintain and difficult to puncture for illegal connections. The quality of the work is high.

The water supply project has reduced losses and pilferage, but in areas not covered by the project pilferage is still rampant and clearly visible. The long service lines that were prone to leakage have been substituted by smaller cross-connections that bring the mains closer to the consumer. As pressure regulators were not included in the contract, pressure dips still occur, as does high pressure during the night.

Metering and billing is still problematic, but a pilot project for private sector meter reading and fee collection has been introduced in another area of 40,000 households. The increased quality of water supply in better-off areas will enhance the possibility to raise prices. During the project period, water prices increased by 130 per cent and proposals for further increases have been submitted to the Public Utilities Regulatory Board. The water authorities still function at rather low levels of efficiency, however, which restricts the possibilities for staff trained under the project to apply their new skills (collecting and analysing field data).

Drinking water, Nanchang, China

The city of Nanchang in central China has a population of close to 4.0 million; it also faces a major influx of migrants attracted by the fast development of the city and the numerous construction projects being carried out. These migrants come mainly from the

province of Jiangxi (population 37 million). The city for its drinking water depends on six water treatment stations with a daily capacity of 780,000 cubic metres. A number of factories pump-up their own water from the river or from groundwater reserves. By the year 2000 the city's daily water consumption is estimated to reach 1.5 million cubic metres. Although savings in water use may be achieved as a result of measures now being implemented, an increase in Nanchang's drinking water supply is highly necessary. The second phase of the Qing Yun water project, the object of this ORET transaction, aims at increasing that supply by another 200,000 cubic metres per day. A first phase, already terminated, increased daily production by 200,000 cubic metres. To achieve that extra capacity, more powerful pumps were installed at the intake station, a second transport pipe laid, extra tanks and filters built, distribution pumps renewed, a water quality analyser instrument installed, and an automatic control system introduced.

The key objective of the project is to increase the production capacity of Nanchang's drinking water supply system, and consequently to improve living conditions in the older districts of the city and make the supply of drinking water more reliable in newer districts. The project further aims at creating more favourable conditions for economic growth, at reducing the pumping of groundwater by industry, and at realising a transfer of technology from The Netherlands to China.

The water project in Nanchang has been delayed for more than a year due to tardiness on the Chinese side: decisions were made without involving the end-user. Some 200 workers were employed during construction and some 90 will be structurally employed, 40 of whom are expected to be women. The concrete and mechanical infrastructures of the present project are of excellent quality and well-monitored by control and analytical systems. A ten-year maintenance arrangement has been contracted-out and maintenance staff have been trained. The location for water intake in the river is excellent as it will not affect groundwater levels.

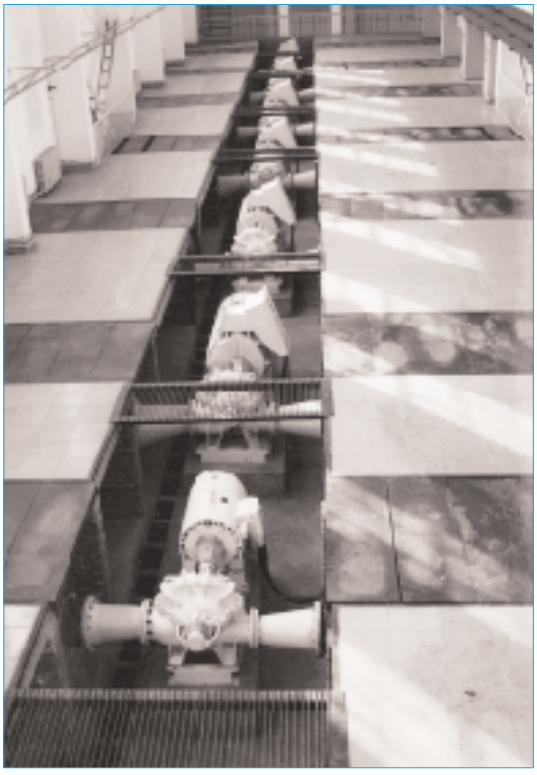
In Nanchang, a good transfer of technology has taken place through training and the introduction of new computerised monitoring practices. A very large stock of spares should guarantee uninterrupted production. Local staff were trained some time ago and will need refresher courses.

The water supply project in Nanchang will increase production to almost one million

cubic metres of good quality water per day. This will improve supply in marginal areas and in highrise housing. Water losses of 20 per cent still occur in old pipes and obsolete industrial production processes. Future financial sustainability becomes feasible as water prices are now being raised; water prices for industries are increasing faster than for households.

Drinking water, Zhangjiakou, China

In 1993 the industrial town of Zhangjiakou, with a population of 450,000 had a water supply system of limited capacity (140,000 cubic metres per day under normal conditions and 110,000 cubic metres in the dry season). As a result, some districts of the town could not be connected to the distribution system, whilst pressure problems prevented water from reaching the higher floors of many apartment buildings. Industry had already started to develop its own boreholes and consequently had been over-exploiting the groundwater aquifer. A project, proposed to increase the capacity of the Zhangjiakou Municipal Water Supply Company, was drawn up by Zhangjiakou municipality and submitted for oretfunding in May 1993. It consisted of the development of 18 new bore holes (each with a capacity of 10,000 cubic metres) in an agricultural area some 13 kilometres out of town, the provision of double pressure main conduits with a diameter of 1,000 mm over the same distance, clear water reservoirs, and re-development of the main distribution system (including three distribution stations, buildings and automatic control system).



The ORET-funded transaction focused specifically on the delivery of pumps, motors and automatic controls.
The key objectives of the project were to improve the hygiene of the living conditions of the Zhangjiakou population and to allow for further growth of the town's economic base. A derived objective was to stabilise the groundwater aquifer level and reduce the resultant soil erosion by diminishing groundwater usage by industry.

Objectives in Zhangjiakou regarding the construction of a water plant, pipes, and electronic operation and control, have been attained. Technology transfer has not been optimal, as the client was not well-prepared to receive modern installations. Also, under-use of the plant led to excessive electricity costs; it is used only to maintain pressure on the system and to provide extra supplies in case groundwater levels should drop below acceptable levels. Individual groundwater wells of industries can and should now be closed. The project has installed a new intake point which does not affect groundwater levels. The project employed some 300 workers during construction and some 50 persons can expect permanent jobs.

There are indications that the introduced technology requires a level of knowledge and experience that is not present at the level of the client. Modern electronic pumps and control systems do not fit well into a traditional organisation with insufficient maintenance capacity. The lack of operational management skills was not timely acknowledged by the client and now requires more input from the supplier than had been foreseen. To remedy the problem, the supplier will make three work visits after closure of the contract in order to improve chances of sustainability.

The Zhangjiakou water project was contracted in 1994, and the certificate of acceptance is dated October 1997. The involvement of the supplier, however, has not yet stopped. The project was delayed by the slow payment of Chinese funds, design difficulties, an earthquake, and damage from lightning. Design problems led to substantial leakage in the test phase. Use of the plant is below capacity as the pumping-up of water is expensive in terms of electricity. The plant is over-designed as expected economic activity lags behind expectations. It has sufficient excess capacity to cope with growing demand for years to come. A more intensive use of the plant would lead to relatively lower energy costs.

5.1.3 ORET *energy projects*

National electrification, Ghana

Many villages in the South-West of Ghana (the region West of Takoradi City) are not connected to any electricity grid. The electrification of rural villages is seen by the Government of Ghana as a way to enhance economic and industrial activity. It provides the basic elements to start up small scale business and to retain people in rural areas. Ghana's overall electricity capacity is planned to be extended from 1,400 Megawatt in 1991 to 1,800 Megawatt in 2002. The general policy is that private investors should produce and sell electricity to the industry, and distribute and sell remaining capacity to private consumers. The Government of Ghana aims at providing electricity from the national power grid to small urban centres, district capitals and rural areas through an electrification programme introduced in six phases. The programme's general objective is to improve the service reliability of the existing network and to improve the operational efficiency and commercial operations of the implementing agencies.

The ORET-supported electrification project in Ghana constitutes the first two phases of the national plan for the electrification of all small rural towns (2,000-4,000 inhabitants). The objective is to construct power lines to 94 rural towns in the area between Esiama and the border with Côte d'Ivoire, connecting some 13,000 customers to the new grid. Project activities comprise a 161 kV transmission line from Takoradi to Esiama, construction of the 161/33 kV sub-station, and assistance in the connection of 45 villages under the Esiama sub-station and 49 villages under other sub-stations in the Western Region.

The electrification project in Ghana was formulated in 1993. Several problems regarding technical and financial issues delayed the appraisal and implementation process. In 1999, some spare parts still had to be delivered. The project did not manage to realise the mandatory 60 per cent Dutch sourcing as aluminium conductors could not be obtained in the Netherlands. The project was considered expensive by the client, but a double check on pricing did not reveal unduly high price levels.

The mission visited 33 villages in the area where 4,607 households had been connected. Another 1,373 customers had paid the connection fees but had not yet received their meter. This reflects the rather haphazard distribution of pre-paid meters, whereby some

have paid more than the 5,000 Cedis fixed by government. The shortage of connections has also led to illegal connections in some towns. The connection fee was a fraction of the normal price, meant to stimulate people in newly-connected villages and small towns to take a connection. This policy has been successful, leading to a larger number of connections in the towns than had been foreseen. This led to the early exhaustion of materials available under the project. Four villages in the sample had only received the wooden poles, but were not connected. According to the Electricity Corporation of Ghana, 23 of the 94 villages are not yet connected. The reasons given are the government-stimulated run on connections and the lack of kWh-meters and LV connection materials.

Extrapolation of the connections realised yields the 13,000 foreseen by the project, hence its targets have been realised. Some 300 persons have been employed by the project, 100 of whom are still under contract to finish the connections. Project materials are of international standards and well-suited for their task in the designated area. No particular consequences are envisaged for the environment. The uneven distribution of house connections should be remedied by Government. The electricity will provide the connected villages with possibilities for telecommunication and small economic activities as electricity is cheaper than kerosene or diesel, particularly for small users. It is further expected to upgrade the level of services and to retain youth, trained teachers and nurses.

Switchgear for New Delhi, India

The Delhi Electric Supply Undertaking (DESU) is responsible for the generation and transmission of electricity in New Delhi. The distribution is organised by one of three local public authorities, dependent on which area is to be served. The sub-stations that are the object of this ORET project were ordered by DESU for use by the 'New Delhi Municipal Committee' (NDMC). They were intended for, and have been installed at, Vidyut Bhawan and School Lane for distributing electricity in a city area with 700,000 inhabitants and 86,000 connections. The total sector covered by DESU has 1.4 million connections. Project activities included the design, engineering and manufacturing of switchgear for two 66 kV gas insulated sub-stations, supervision on site, tests on site, and guarantees during 18 months after shipment. Not included were construction of the sub-stations and their installation. The long-term objectives are: the modernisation, upgrading and strengthening of the transmission and distribution system in Delhi; the introduction of state-of-the-art technology for economic, reliable and safe distribution of electricity; the structural

alignment of DESU's capacity with the demand for electricity in its sector. Shorter-term objectives focused on the inauguration of 22 transmission units in two locations in Delhi and the conversion of the 66 kV electricity supplied into 33 and 11 kV respectively in order to achieve capacity gains, increase the security of power supply, and reduce system-related losses. The installation of internal gas insulated switchgear also aims at reducing the amount of land required by a sub-station and at lowering maintenance costs.

The project has suffered many mishaps and delays, such as: damage to the equipment during sea transport, substantial delays in construction of the civil works, water damage and corrosion resulting from outside storage of the equipment for almost two years. The equipment has now been installed and awaits commissioning by the supplier. The project is formally finalised; due to poor treatment of the equipment, however, reparations are still necessary at the client's expense. Once operational, the switchgear is expected to attain its direct objective: to stabilise supply in the target areas in New Delhi. The electricity company could not indicate to what extent the poorer sections of the city would benefit from the in-built overflow effect of the project.

The development relevance can only be established in a very roundabout way as a better supply to prime areas may reduce the frequency with which poor areas were cut off in the past. The switchgear is situated in a large central area in New Delhi where it mainly serves better-off families, government buildings and embassies, but also schools and hospitals. Other economically less important areas are usually cut off to ensure supply to these government and business areas. The efficiency of the switchgear is expected to generate an 'overflow' capacity that will improve supply to the poorer areas. An immediate economic benefit for the electricity company is that the switchgear occupies only a third of the space of conventional gear, in an area where land comes at a premium (50,000 to 100,000 Rupees per square meter).

The switchgear will not generate any additional direct employment. Since the Indian electricity companies are already working with gas-insulated switchgear, they are familiar with its various technicalities. The gas-insulated switchgear in Delhi need little, albeit specialised maintenance. The gear is placed indoors and does not require polluting diesel-generators as back-up facilities. SF6 gas, provided it is properly handled, will not cause environmental problems. However, the various security measures required for this type of equipment, e.g.: ventilation, rodent proofing, and outside location of surge

arrestors, were not in place. The institutional setting of the project, particularly the extremely tedious bureaucratic procedures, shed some doubt on the efficiency with which possible technical problems would be solved. Handling of the equipment has so far been poor.

The price and quality of the switchgear is considered reasonable. The handling of the appraisal has suffered from poor communications between client and supplier. Also, during implementation of the project, the client repeatedly ignored advice and civil works were delayed by two years. The supplier has put much effort into solving the various problems, however, and has shown flexibility in coping with setbacks arising during implementation.

5.2 Development effects of ORET public-service projects

The development effects of oretpublic-service projects are assessed in terms of permanent and temporary employment effects, poverty alleviation, and environment, technical and financial viability, as well as possible wider economic effects on the recipient economy.

Table 5.2 Development effects of ORET public-service projects[1]

Project	Country	(Expected) direct employment creation		Lack of negative effects on the poor	Environmental effect	Expected viability		Expected wider effect on economy
		Perm.	Temp.			Technical/ managerial	Financial[2]	
Health								
Health care Gujarat	India	688	200	+	+	+	-	+
Diagnostic equipment	Ghana	150	20	+	+	+	0	+
Vaccine cleanrooms	China	n.a.	n.a.	+	+	+	0	+
Hepatitis-A project	China	140	n.a.	+	+	+	0	+
Water supply								
Water Accra/Tema	Ghana	0	390	+	+	+	0	+
Water Nanchang	China	90	200	+	+	+	0	+
Water Zhangjiakou	China	±50	300	0	+	+	0	+
Energy								
Electrification	Ghana	0	300	+	+	+	0	+
Switchgear	India	0	n.a.	+	+	+	+	+

1 *See chapter 3. 4 for an explanation of the scores.*
2 *See also annex 4: summary table on financial viability. Scores are based on the (expected) income generated by the project. In all cases with a zero or negative score, a guarantee has been obtained for repayment of the loan.*

Public-service projects are particularly geared to improving public facilities such as health care and the supply of energy and water, and to increasing the access of large population groups to them, rather than to direct employment generation. In the case of diagnostic equipment for Ghana, the availability of sufficiently trained staff has proven a constraint in various locations. A similar problem is likely to occur in Gujarat where a similar project is now gaining momentum, but which has a much broader scope and hence more employment opportunities. The energy projects and the Ghanaian drinking water project are being operated by existing staff of the recipient organisations.

None of the projects have had adverse effects on the poor or the environment. In fact, most are expected to have particularly positive effects for the poorer sections of the population. All health projects are geared particularly towards improving medical services in remote areas, and most services are free or available at low cost to the poor or destitute. Much of the medical equipment is targeted towards reproductive health problems. Also drinking water projects have positive effects with regard to the poor, with the exception of Zhangjiakou where the extension of piped water or improved supply into slum areas was not part of the project. The environmental objective of the latter project, i.e. to release pressure on groundwater wells, has been attained. Improved electricity supply to the urban poor in New Delhi and to remote communities hitherto deprived of any connections in Ghana, is also considered a positive effect, with the qualification that the switchgear has primarily benefited the better-off part of New Delhi.

All projects are technically viable in that the recipient institutions have the managerial capacity to operate and maintain the equipment provided. In all cases, recipients had prior experience with the (process) technology involved or with similar technology, although additional training was sometimes required for familiarisation with the modern versions of older equipment. In the case of drinking water in Zhangjiakou and switchgear in New Delhi such training was not effective in that recipient organisations did not always heed the prescribed caution with the new materials. In these cases, problems have been remedied after substantial additional input by the suppliers.

The chances for financial viability of public-service projects are usually limited since they render services for the public benefit at no cost or at token prices. Most projects, however, do generate a flow of revenue, albeit insufficient to offset investment and operational costs: health services, drinking water and electricity are all available at a cost to the

client, and in many cases their prices have already shown a tendency to rise. This brings financial viability into range in some cases, but it is not directly in the interests of the poor. Other than in Ghana, medical services in Gujarat are reported to be completely free of charge in state hospitals, hence no revenues will be generated. All projects are backed by government guarantees with respect to debt repayment. The switchgear project is rated positive as its financial viability seems assured through fee collection.

The expected wider effects of public-service projects are of particular importance, as their immediate employment effects are usually more modest as compared to investment in productive sectors. The ORET/MILIEV employment objective for the longer term includes employment effects through improved social infrastructure. All ORET public-service projects have contributed or are contributing to such improvements. The provision of medical services and improved access for the poor to these services, is expected to lead to better health conditions for the beneficiaries, usually indicated as an increase in 'active life years'. ORET medical projects are thus expected to generate more active life years, either through vaccination, or preventive or curative treatments at no or low cost. It may be assumed that healthier people will be better able to be economically active, but this does not necessarily guarantee more employment opportunities. The same holds, to a certain extent, for improved supply of and access to clean water although this, together with sufficient pressure on the supply system, is known to create economic activity, for instance in newly connected slum areas. The extension of electricity grids or the stabilisation of supply into slums and remote areas also provides a precondition for economic activity and enhances the retention of young, active people in the more remote areas. More generally, improved public services in poor areas has such an effect on people: they are less likely to flock to urban areas, and teachers, medical staff and entrepreneurs are more likely to work in smaller towns and villages.

5.3 Export relevance of ORET public-service projects

The export relevance of transport projects is indicated in Table 5.3 in terms of the sourcing of goods and services in the Netherlands, the number of person years generated, client satisfaction and the chance for further deliveries.

All recipients of deliverables for public-service projects have expressed their satisfaction with the quality of the materials. Initial problems arose in several cases but were all solved to the client's full satisfaction. In the case of the energy projects, these problems

have been substantial, severely affecting efficiency during implementation. In China, the vaccine projects had been installed at the time of the visit, but were not yet operational. Actual satisfaction about the operations could therefore not be established, but recipients were satisfied with the quality of the materials. The same applies to medical equipment for Gujarat; here, too, satisfaction with the training and materials was such that the health authorities wanted the project to become an example for other states in India. More in general, it can be said that most clients have assured themselves of the quality of deliverables during visits to factories in the Netherlands.

Table 5.3 Export relevance of ORET transactions in the public services sector[1]

Project	Country	Dutch sourcing (%)	Person years	Client satisfaction	Present chances of further deliveries
Health					
Health care Gujarat	India	75	317	n.a.	+
Diagnostic equipment	Ghana	65	78	+	+
Vaccine cleanrooms	China	74	105	n.a.	+
Hepatitis-A project	China	70	80	n.a.	+
Water supply					
Water Accra/Tema	Ghana	64	42	+	+
Water Nanchang	China	73	37	+	+
Water Zhangjiakou	China	72	23	+	+
Energy					
National electrification	Ghana	49	60	+	-
Switchgear	India	94	31	+	-

1 *See chapter 3.4 for an explanation of the scores*

Grants to the tune of NLG 121.7 million have generated transactions for public services to a value of NLG 305.2 million, of which NLG 204.2 million was sourced in the Netherlands. Some 773 person years of employment have been generated.

All transactions except the support to national electrification in Ghana complied with the condition that at least 60 per cent of deliverables should be sourced in the Netherlands. The supplier did not manage to get particular Dutch spare parts during implementation

of the project and requested dispensation. Exceptionally, this was granted.

The project for diagnostic equipment in Ghana is nearing completion. The operators of the equipment and Ministry of Health officials have expressed their great satisfaction with the new equipment. Supplies are more than sufficient to cover the diagnostic needs of the various hospitals and health centres, hence further orders in the short- to medium-term are not likely. Given the satisfaction of the client and the presence of the supplier in the country, however, orders for other medical requirements may be realised.

The activities in Gujarat, India, are likely to generate additional training needs. At the time of the visit, only the first batch of equipment had been sent and installed at a pilot site. Hospital staff already showed great satisfaction with the equipment and the Gujarati government uses the project as a showcase. The project is thus serving as an example for other states, which may provide chances for winning new tenders.

The need for clean rooms is high in China: in the 1993-97 period some 100,000 m² were required. The supplier has established good relations in the health sector and new contracts have already been obtained: a commercial project in Shanghai and an oretproject in Shenzen. The supplier expects to start a joint venture for local production design and engineering of clean room parts. The Kunming project is in its start-up phase, but the user has already expressed satisfaction; the quality of products is considered high and training is well appreciated. A related project for the production of Hepatitis A vaccine has been started in Kunming.

The supplier of water systems in Accra and Tema has a realistic chance for further orders: some oil-pipe laying had previously been done, and the supplier is already involved in follow-up projects for water supply. The client was very satisfied with the high quality of the works (very few leaks at first testing, hence timely delivery). The Qing Yun water plant in Nanchang needs further extension in a third project phase. Given the satisfaction of the client, the supplier may obtain another contract. The present project provided new opportunities on the Chinese market for the supplier, and local production of parts is contemplated. The water plant delivered to Zhangjiakou should have been the start of a longer-term relationship between client and supplier. The client wanted the supplier to build two water treatment plants; due to the changed concessionality under MILIEV, however, this may not materialise.

The high quality of electrification works in Ghana is acknowledged by the client, but the price was considered to be high; a double check has revealed that prices were reasonable. Chances for further contracts are thus less likely, although other suppliers may provide cheaper but lower quality materials. There is market potential for 66 kV gas-insulated switchgear in India, as this type of equipment is not yet locally made. The supplier has supplied good quality gear and has dealt effectively with the various damages incurred during transport and storage. The project has met with many problems, however, and so far there is no indication of repeat orders. The smaller types of gas insulated switchgears (33 and 11 kV) are already manufactured in India. The Delhi Electric Supply Undertaking indicated that no foreign assistance is required for their production. Hence, the scope for joint ventures or repeat orders seems bleak.

5.4 Efficiency of ORET public-service projects

The efficiency of ORET transactions is measured by two criteria: the price paid for goods and services, and the length of the appraisal and implementation process in relation to the project plan. The more generic price issues are discussed in Chapter 8, in the context of the management of the ORET/MILIEV programme.

Table 5.4 Efficiency of ORET public-service projects[1]

Project	Country	Price/quality	Duration of the project cycle
Health			
Health care Gujarat	India	+	-
Diagnostic equipment	Ghana	+	-
Vaccine cleanrooms	China	+	-
Hepatitis-A project	China	+	-
Water supply			
Water Accra/Tema	Ghana	+	+
Water Nanchang	China	+	-
Water Zhangjiakou	China	+	-
Energy			
Electrification	Ghana	+	-
Switchgear	India	+	-

1 *See chapter 3.4 for an explanation of the scores.*

The quality of the deliverables was generally high and the price/quality ratio was reasonable in all cases. Appraisal files show that prices or profit margins that were too high had to be corrected by the supplier before approval was given. A double check on prices and profits for some projects confirmed that they had been thoroughly scrutinised.

Health

All health projects have suffered long delays in appraisal, in obtaining commercial loans as well as in implementation. Appraisal of the Gujarati project was not unduly long in view of its complexity, but political and financial problems delayed the actual start by several years. A similar situation occurred in the Ghanaian diagnostic equipment project.
The vaccine cleanroom project was conceived in 1992 and is only now in its testing phase. Most problems occurred during implementation: late payments, cumbersome development of a process technology by a Dutch supplier, and slow delivery of goods by local suppliers. Since the cleanroom project and the Hepatitis-A project were interlinked, the latter was also delayed.

Sanitation

Despite difficulties in implementation, the water supply project in the Accra/Tema Metropolitan area went relatively smoothly and was only delayed by a few months. Good quality work yielded savings in the form of unused spare pipes, that were used to extend water supply further into the Northern slum area.
The Chinese water supply projects suffered delays in both appraisal and implementation. A common factor is that local designers have problems in adapting their traditional designs of civil works to the needs of modern installations. Such processes are time-consuming and lead to implementation problems. In Zhangjiakou, further delays were caused by damage from natural calamities such as an earthquake and lightning strikes.

Energy

The electrification project was conceived in 1993 and in 1999 some spare parts still had to be delivered. The project did not manage to realise the mandatory 60 per cent share of Dutch-sourced materials, as it could not obtain aluminium conductors in the Netherlands.

Poor communication between client and supplier caused much delay in appraisal of the switchgear project in India. During implementation, the client repeatedly ignored advice, and civil works that had to be carried out by the client were delayed by two years. Misfortune during sea transport and unwarranted outside storage of the equipment caused damage and delays.

5.5 Issues

Investments in public-service projects exhibit some distinct features. Recipient institutions show inherent institutional weaknesses that are difficult to overcome. Examples include: slow decision making and dependence on central decision making, long and cumbersome procedures, limited flexibility (e.g. in changing traditional designs of civil works), lack of qualified staff, occasional lack of funds, poor planning, etc. These problems are also encountered in development projects and it is noted that commercial suppliers have to face similar persistent obstacles. Most of the delays were not attributable to the suppliers.

In some cases, suppliers are entrusted with the task of reinforcing the recipient institutions through training or the introduction of maintenance systems. Such training is very useful, but tackling inefficiencies in the institutional context usually requires more, and more specialised, input that goes beyond technical training.

Despite the fact that public-service projects often appear rather inefficient and subject to frequent delays, their effectiveness is generally good. The economic effects are also high, since many people are reached by public-service projects. In this connection, financial viability seems limited as subsidies are paid in order to maintain the socio-economic benefits.

An important feature was that many recipient institutions had increased, or contemplated increasing, the prices of services rendered, particularly for large users (drinking water) or the better-off (diagnostic equipment). In most cases the poor were either fully exempted from payment for medical services and vaccinations or, as small users, paid nominal fees for drinking water and electricity.

Frequent applications are made in some sectors, such as drinking water and health, but appraisal missions are only sparingly undertaken. Such a mission was fielded in the case

of Gujarat, a large and complicated project. A case could be made for more generic, sectoral missions that also give attention to (the quantification of) issues and effects that may arise for all applications in that particular sector. Examples include: institutional problems and particular weaknesses, incidence of diseases, problems regarding pricing and fee collection, feasibility of realistic pricing (or 'willingness to pay'), a more comprehensive overview of quantifiable and non-quantifiable economic effects of the project, etc.

A better monitoring of project implementation would be particularly important, partly for feedback to the appraising consultant. Only then will it be possible to build-up an efficient body of knowledge and experience for future use.

6 Evaluation ORET: Infrastructure

6.1 Description of selected projects

Infrastructural works are a constant feature in the ORET programme. Projects are dominated by 'wet' infrastructure, such as port construction and the supply of tugs, ferries and dredgers. The list of recipient countries for wet-infrastructural works shows a wide variety, but two large Dutch companies feature prominently on the list of suppliers. ORET projects for land transport comprise mainly road rehabilitation by two suppliers in two countries and the supply of passenger buses.

If chosen well, infrastructural works benefit various transport modes and, through earth works, will protect vulnerable areas against the vagaries of nature. They are thus expected to have a positive impact on the economic development of areas touched by the projects. Much like public-service projects, infrastructural works often require large initial investments that may not be earned back within the 10-year period set by OECD for commercially-viable projects. The works may eventually raise sufficient revenues for their upkeep, but commercial investors are usually not willing to wait that long.

The field study for infrastructural projects supported by ORET comprised visits to 10 projects in three countries and the Palestinian territories; seven selected projects were larger than SDR 2 million (NLG 5.4 million). The delivery of aircraft was not notified to the OECD Consultation Group in Paris as a grant of 81 per cent was extended. An overview of the visited projects is given in Table 6.1; a complete overview of projects in this category is provided in Annex 3.

Table 6.1 ORET: overview of infrastructural projects selected for field visit* (amounts in NLG millions)

Year of approval	Sub-sector	Transaction amount	Grant amount	Country	Project status
	Land transport				
1994	Road rehabilitation I	92,500	37,000	Ghana	Ongoing
1994	Road rehabilitation II	45,000	18,000	Ghana	Finalised
1995	75 Passenger buses	25,995	15,597	Pal. terr.	Finalised
1996	Dangerous goods transport	4,967	1,987	China	Finalised
	Water and water transport				
1996	6 Dredgers Dongtin Lake	34,781	13,913	China	Ongoing
1998	Cutter dredgers Longwan	33,400	15,430	China	Ongoing
1994	3 Tugboats	19,095	7,638	Ghana	Finalised
1994	Cutter suction dredger Haikou	9,068	3,627	China	Finalised
1995	24 harbour trailers	1,069	427	Ghana	Finalised
	Air transport				
1996	2 Fokker aircraft	35,000	28,350	Pal. terr.	Finalised

* *See maps on page xii through xv for project locations.*

6.1.1 ORET *land-transport projects*

Ghana road rehabilitation

Land transport constitutes the most important internal transport mode in developing countries. Construction or improvement of roads as well as the provision of transport capacity for goods and passengers is a prerequisite for economic development. In Ghana, as a result of a relatively sparsely populated interior with large distances between major towns, some major trunk roads connect the most important cities. Areas at some distance from these roads are deprived of good connections; hence, if they have any economic potential, it cannot be tapped. With the growth of population and economic activity, access to such areas becomes more and more necessary.

The road rehabilitation projects in Ghana focus on improvement of the Kumasi-Yeji road (the old North-South connection). The improved road should re-establish the shorter

route from Accra, Tema and Takoradi towards the North, and improve connections with the area around the Kumasi-Yeji road which has been targeted by Government to become the new 'granary' for the densely-populated Southern part of the country. These road plans are in line with Ghana's 'Gateway concept' which aims at improving the handling capacity of the ports and establishing better connections with their hinterlands.

The road projects in Ghana are now being implemented, employing some 450 Ghanaian workers. The projects constitute the second and third stretches of the road from Kumasi to Yeji, a small town on Lake Volta. They represent an extension of an earlier project covering the first stretch, from Kumasi to Mampong, that has been finalised by the supplier to the full satisfaction of the client. The finished road will become a toll road. The stretches now under rehabilitation will further open-up the targeted area and provide a better connection to the North. With Danish assistance, the ferry services from Yeji across the lake have also been improved.

After completion of the construction of the Kumasi-Yeji road, travel time to the North will be reduced, the port of Tema will have better connections with its hinterland, and accessibility of the area around Lake Volta will be improved. Already, seasonal price hikes in Kumasi for yam and fish from Yeji have reportedly been smoothed out by the improved road connections and small economic activity along the road has increased.

A Pavement Management Maintenance System monitors road conditions, while actual maintenance is carried out by a mobile maintenance unit, funded by a Road Fund. This Fund receives money from fuel taxes (94 per cent of total revenue), vehicle licensing (3 per cent) and tolls (3 per cent). The Fund generated US$ 76 million in 1998 and is expected to grow to a level of US$ 130 million in 2002. The Fund is regularly audited and should be able to cover maintenance costs fully by 2002; this implies that road construction and rehabilitation will remain a government responsibility.

Palestinian buses

Passenger transport in the Palestinian territories is by bus as no railway structure exists. The organisational set-up of bus transport has not fundamentally changed since its inception under the British mandate. Transport concessions for certain routes are awarded to private bus companies provided they deploy buses not older than 15 years. For West

Bank and Gaza this limit is now set at 19.5 years, most buses being very old due to limitations on their import. Since 1988 no new buses had been acquired up to the time of the bus contract negotiation. Some 85 private bus companies, belonging to the Palestinian Bus Federation (PBF), operate a fleet of 500 buses. The shortage of buses is compensated by the services of official and non-official taxis, applying the same or lower rates than the buses. They constitute a safety risk as their drivers have received little or no vocational training and maintenance standards are poor.

In the Palestinian territories, the movement of people is restricted by the fact that Palestinians have no free access to parts of West Bank and Gaza, and between West Bank and Gaza. A particular problem is posed by the Israeli condition that Palestinian buses plying the West Bank are not allowed to use East Jerusalem as a hub for intra-West Bank connections. This renders bus operations fragmented and expensive. The effect of the measure is exacerbated by the fact that travellers to and from Jerusalem make use of illegal transport facilities such as shared taxis and mini-buses.

The objective of the supply of 75 buses to the Palestinian territories is to increase the carrying capacity of regular public transport in West Bank and Gaza and to contribute to a reliable and efficient transport network. Service levels are to be raised through improving the driving and maintenance capabilities of private bus companies.

The 75 buses supplied in the Palestinian territories are functioning well and mechanics and drivers have been trained; driver courses were short, half a day per driver, which initially affected the skills of the drivers to handle modern buses (equipped with inter-coolers, turbochargers, ABS, Voith Retarder and tachometer). All buses are still running satisfactorily, and the stock of spare parts has hardly been used. The delivery of buses relieves the shortage of public transport services in the Palestinian territories. Some 60 drivers have been given work and technicians have been trained to maintain the modern buses. Fuel savings amount to some 40 per cent as compared to the old buses still in use.

The delivery of buses to the Palestinian Bus Federation made it possible for PBF members to maintain their market share. The fuel economy of 40 per cent enables substantial operational economies. Women prefer to use the new buses as they offer more space and comfort. If there were no political restrictions to bus operations, substantially more jobs could have been created, e.g. for transport between the territories and to destinations in neigh-

bouring countries. Slack time is now used for student transport at half-price and the transport of labourers.

The maintenance staff of PBF is highly skilled, and a large stock of spare parts is available with which to maintain the technologically-advanced buses. The layout of the workshops and maintenance organisation, however, need substantial improvement.

Dangerous goods transport, China

The fast growing economy of Eastern China has boosted the transport of goods by road in general and of dangerous goods in particular. Inflammable, explosive and corrosive goods are transported by conventional trucks and trailers of local make. These combinations are often old, poorly maintained and characterised by high fuel use. Their poor state of repair causes frequent accidents on crowded roads, the environmental effects of which can be very damaging.

Sinotrans is an integrated group of trade, finance and transport companies with a worldwide network of offices. It operates some 3,000 trucks and is responsible for the transport of chemicals for major companies in Beijing, Dalian and Tianjin. In total, some 15 million tons of chemicals, including 8 million tonnes of oil products, are moved annually. The Dangerous Goods Transportation Association has issued strict regulations concerning the transport of dangerous goods, and Sinotrans lacks the appropriate trucks with which to continue the haulage of dangerous cargo in China.

The project for dangerous goods transport is therefore oriented towards providing special trucks, with the ultimate objective of reducing the chances of accidents that may be hazardous to human health and the environment. Major advantages expected from trucks for dangerous goods transport are increased safety for drivers and other road users, and prevention of environmental pollution and/or explosions in the case of accidents. The trucks have special fittings with which to reduce the harmful effects of an accident involving dangerous goods, such as an exhaust with spark catcher, main switch and isolated battery box. The trucks were to be deployed in Eastern towns, such as Beijing, Dalian and Tianjin, where the demand for dangerous goods transports is highest.

The 47 special trucks for dangerous goods transports have been dispersed throughout China, rather than in the coastal areas where the demand is such that full use of the trucks could be made. At present, with the trucks travelling throughout China, return freight in the form of dangerous goods cannot always be guaranteed. Since the project is commercially feasible, the cost of the transaction has been kept below NLG 5 million. This means that trailers could not be covered by the project and were ordered locally. They have added axles for increased safety, but are not of the same excellent standard as the trucks.

The dangerous goods project has helped to improve the quality and safety of dangerous goods transport by road. The effectiveness would have been greater if the delivery had included trailers built according to the same safety standards as the trucks. A reduction of accidents with hazardous substances depends on safety being incorporated into both truck and trailer, and not only in one of the interlinked units. Fuel savings appear to have been over-estimated in the appraisal by more than three times but are nevertheless substantial: some 282,000 litres per year.

The employment effect of the transaction is modest as no new drivers have been employed for the trucks. However, technicians, drivers, fitters and depot managers trained by the project are gainfully employed, since Sinotrans intends to extend its activities in the hazardous goods sector. The training of drivers and technical staff has been longer and more diversified than anticipated in the appraisal. All trained drivers are still in Sinotrans' employment and are given bonuses for fuel saving and driving performance. The training of technicians and depot managers has been adequate and trucks can be maintained in the extensive Sinotrans workshop network: some 30 Sinotrans repair facilities, a good stock of fast moving parts, fuel pumps and windscreens will ensure the sustainability of a good operational level of the trucks.

6.1.2 ORET *water and water-transport projects*

Dredgers for Dongtin Lake, China

The 18,800 km² Dongting Lake Basin is part of the Yangtze Basin in Hunan Province, Central China. The area is prone to flooding and in 1995 the worst flooding losses were reported in 33 years. Dongting Lake Basin is a complex water system that functions as a

flood retention area, but it has gradually silted up and large parts of land have been reclaimed. Without intervention the whole lake area will become an alluvial plain with increased risk of flooding and damage and ever more loss of life. Shallow floods in the interior are also a health hazard as snail fever spreads quickly in the affected areas. A series of structural measures have been taken by Central and Provincial Governments to limit the influx of sediment into the lake area, including the construction of flood control structures, multi-purpose dams and the 'Three Gorges' dam. All these should reduce the net sediment influx to 60 million cubic metres per annum. Support measures with which to control floods and ensure better environmental protection comprise the removal of hydraulic bottlenecks by enlarging the profile of the channels, the creation of elevated areas (terps), raising the crest level of the dikes, and improvement of their stability. The majority of the works presently being undertaken are of a remedial nature, but in future more structural measures will increasingly be implemented (strengthening of dikes and removing large quantities of net sediment influx). Dredging is an important part of these flood control measures, since it is used for dike construction and strengthening as well as for the enlargement of riverbeds, overflow areas and channels.

The present fleet of the Hunan Hydro Power Department (HHPD) consists mainly of small dredgers, with an aggregated effective annual capacity of some 8 million cubic metres. The capacity actually required to carry out the remedial actions listed above, over a total length of 1,200 kilometres, corresponds to a dredging capacity of 60 million cubic metres.

The shortfall has to be made up by increased productivity of the existing fleet and of the effectiveness of dredging. The present project provides a modest expansion of dredging capacity through the supply of four dredgers of the Beaver 1600 type and two dredgers of the Beaver 3800 type, as well as pipes, spare parts, and training of dredging staff.

The six dredgers for Dongtin Lake are to be used for dredging the Lishui Channel in order to increase its capacity, and thereby also the capacity of Dongtin Lake which is to act as an overflow of the Yangtze. The dredged silt is used to replace the soil that has been used in constructing protective dikes along the rivers. Some 13 million m^3 (of the required 60 million) of earth and rock had already been moved at the time of the mission, increasing the depth of rivers and the water storage capacity of the Lake and providing material for harnessing the lake shores. Some 150,000 people, living in previously flooded areas, are now protected.
The dredgers have doubled the capacity of HHPD whose plans will create additional jobs: the works will require extra surveying and provide temporary work for local labourers during construction and improvements. The client expressed some complaints with regard to the capacity and after-service care of the dredgers: actual capacity remained well under design capacity (mainly due to the fact that silt had to be transported through a long pipeline), and the waiting time for a particular spare part was considered to be unduly long. The supplier now operates a service centre in China to speed up the delivery of high quality spare parts. With respect to complaints regarding the capacity of the dredgers, the supplier has planned a workshop for end-1999 in Hunan on special equipment with which to monitor their performance. This is now being done with less accurate air photos.

Dredger for Xinbu Island, China

The Nandu is the principal river in Hainan Province and two tributaries form two islands near Haikou City. The silt of all three rivers is polluted as a result of continual discharge of household sewage and industrial waste. Floods occur once or twice a year, affecting the islands and riverine areas through the deposit of polluted silt. To protect these areas from flooding and resultant pollution, a barrier was to be constructed around Xinbu Island as well as a silt treatment area, including an access road. The project provided for acquisition by the China National Technical Import and Export Corporation of a standard mono-pontoon cutter suction dredger (Beaver 3800), spare parts, and technical assistance. The main project activities include dredging of the polluted river silt, its transportation to the

treatment site, and the construction of a barrier around Xinbu island to halt land erosion. The broader environmental project further includes treatment of the river pollution at source and the construction of a sewage treatment plant (funded by the German Government).

Acquisition of the dredger was intended to achieve two major objectives: to minimise the risk of flooding and consequently of pollution on Xinbu island, and to ensure better protection of the island against further erosion by the sea, thereby making it available for full-scale economic use

The dredger for the protection of Xinbu island has remained idle for two years, as bureaucratic problems severely delayed the construction of a silt treatment area and its access road. Once actual dredging activities start and a flood barrier is constructed, highly valuable and marketable urban land will be reclaimed, the value of which was not taken into consideration in the project assessment. The project, although not yet operational, is expected to yield results that will be commercially viable and sustainable as the land to be reclaimed and protected is a prime location for luxury apartment buildings.

Dredger for Longwan, China

Hainan island, in the south of China, has an Eastern coastline that is unprotected, and suffers from erosion caused by the prevailing north-eastern and south-eastern winds. From eight to twelve meters of coastline, representing some 200 hectares, is lost each year. The 'Hainan Longwan Harbour Dredging' project consists of providing a revetment for seven selected parts of the eastern coast of Hainan island. These maritime works require the construction of a rubble mound in two metres' deep water, at varying distances from the shore. Land then has to be reclaimed between the rubble mound and the shore. The total implementation time has been estimated at 23 years if two dredgers are deployed. To make these land reclamation activities possible, the project is to supply to the Hainan Longwan Port Development and Construction a Beaver 4600 Cutter Suction Dredger, a Beaver 3800 Cutter Suction dredger, a Damen Stantug 2006 tugboat, 1850 metres suction/discharge pipe, and 12 Steyr trucks.

The main objective is to protect the Hainan coast and reduce the current annual erosion. It will also have other significant positive effects such as greater protection against typhoons and the reclamation of 3,000 ha of additional land area. Most of that land will be used for forestry and as a windbreak, but also for agriculture (cereals, vegetables and fruit) and housing. Land for commercial activities will not exceed 5 per cent of total reclaimed area.

The dredgers for Hainan's coastal protection had not yet been delivered at the time of the mission. Special studies had concluded, however, that the proposed revetment works were not an optimal solution as they might lead to erosion elsewhere. It was also thought that the two dredgers would be insufficient for timely completion of the works. Despite the sub-optimal planning of the project, a go-ahead was given in view of the urgency of the problem of coastal erosion.

Tugs and trailers, Ghana

In Ghana, the Government has launched the so-called 'Gateway Concept', aimed at removing bottlenecks that prevent a smooth throughput of goods in ports and with connecting roads, rail and waterways. The capacity of the commercial ports of Tema and Takoradi was restricted by their limited ability to handle containers. A shortage of powerful tugs made it impossible to guarantee at all times the safety of incoming ships. In 1984, assistance was sought from the World Bank to rehabilitate the ports, and a programme for port improvement took off in 1986. In that context, the Ghana Ports and Harbour Authority received, amongst other things, 26 terminal tractors and 44 trailers for container transport. Later, 24 derelict trailers were replaced by the Dutch supplier.

The supply of trailers to Tema and Takoradi is intended to improve the performance of the stevedoring department through the safe and efficient handling of cargo, particularly containerised cargo. Three tugs have been supplied in addition to two delivered earlier, to increase the capacity to move vessels in the ports and to improve safety (e.g. to avoid accidents with oil tankers which constitute a potentially significant environmental hazard). Both tugs and trailers help to achieve a faster turn-around time of vessels and to increase the throughput of imported and exported goods. Trade flows are steadily growing: the number of containers handled in the ports of Tema and Takoradi grew between 1996 and 1998 with 50,000 to almost 200,000. To handle these increased numbers, more and appropriate handling equipment is needed.

The deployment of five new tugs and 48 new container trailers in ports in Ghana has solved the existing bottlenecks in container handling and will allow the expected growth in throughput to be achieved in the near future. The deliveries, together with projects by other donors (port management, quays, sheds, tractors, workshops), have brought the privatisation of container handling within scope. A problem remains with regard to cus-

toms as all containers are checked, causing many unnecessary movements, delays and costs. This does not directly affect turn-around time, however. The presence of the new tugs has greatly reduced the risk of accidents with incoming or outgoing vessels, particularly oil tankers.

The direct employment effect of the project is limited, but the increased throughput and the stimulation of economic activity in the hinterland will create indirect job opportunities. The operations are sustainable as the ports make a profit and privatisation is being considered for some port operations. Port fees have been raised and are now charged in hard currency. The tugs delivered to Tema and Takoradi are of high quality and their crews are well trained. Training in maintenance has also been given, and an efficient spare part acquisition and storage system set-up. The low maintenance need of the trailers will ensure their performance; 24 trailers of an earlier delivery are still in use.

6.1.3 ORET *air-transport project*

Palestinian aircraft

The international connections of the Palestinian territories are poor due to the lack of good roads linking the West Bank and Gaza, together with the absence of rail connections and a seaport. It was only in 1998 that an airport in South Gaza became operational. Previously, flights had to be operated from Egypt. From the outset, the Palestinian Authority has put major emphasis on improvement of the internal and external transport network, with priority for the construction of a seaport and an airport in Gaza. Within this context the development of a Palestinian airline was also given high priority. The acquisition of Fokker 50 aircraft, permitted by the Oslo Accords, therefore forms an essential component in establishing a sound Palestinian air transport infrastructure.

The project covered the purchase of two used Fokker 50 aircraft, the training of pilots, mechanics, cabin staff and operations personnel, maintenance and engineering support, warranties on Fokker spare parts, technical and operational support in Palestine, and a stock of spare parts, tools and ground support equipment. The exceptional 81 per cent grant provided by the Dutch Government for acquisition of the aircraft and related services is to be considered as an untied ORET grant and was notified as such to the OECD Consultation Group in Paris.

Acquisition of the aircraft is intended to accomplish four main objectives set by the Palestinian Authority: the establishment of a reliable and safe airline; direct airline connections between the Palestinian territories and neighbouring countries (Gaza to Amman, Cairo, Damascus, Beirout, Jeddah and Larnaca); a maximum transfer of Fokker's aircraft expertise and technical capabilities to Palestine; and enabling Palestinian Airlines to operate the two aircraft independently after cessation of the technical and operational support by Fokker.

The aircraft have been operating since July 1997 (first from Egypt). In 1998 they had a passenger load factor of 64 per cent on regular flights and 47.5 per cent on charter flights on the occasion of the Hadj. The number of flights and destinations in the region are still below expectation, as only Amman, Jeddah and Cairo are regularly served, and with a lower frequency than envisaged during appraisal. Other destinations such as Larnaca, Damascus and Beirout were planned, but are not yet included in the flight schedule. The new air company has to operate under difficult circumstances. Only when the number of departures and destinations are stepped-up will an operational break-even point be reached, but this is closely linked to political developments in the area. The delivery of spare parts and the training of maintenance, cockpit and cabin staff has been satisfactory. In January 1999, the aircraft have been serviced in the Netherlands.

The aircraft in the Palestinian territories serve a purpose in carrying passengers to neighbouring countries without having to transit through Israel. Occupancy rates are still rather low, but the planes form the backbone of a starting air company and constitute psychological support for the Palestinian Authority in its quest for economic self-reliance. Some 80 people run the two planes, 25 per cent of whom are female. Environmental effects in relation to aircraft use are less than was anticipated as the airfield is situated away from the city of Gaza.

6.2 Development effects of ORET transport projects

The development effects of ORET transport projects are assessed in terms of permanent and temporary employment, poverty alleviation and the environment, technical and financial viability, as well as possible wider economic effects on the recipient economy.

The direct employment effects of transport projects are mixed. Road construction, trucks, tugs and trailers, as well as the Xinbu and Longwan dredgers, generate hardly any direct

Table 6.2 Development effects of ORET transport projects[1]

Project	Country	(Expected) direct employment creation		Lack of negative effects on the poor	Environmental effect	Expected viability		Expected wider effect on economy
		Perm.	Temp.			Technical/ managerial	Financial[2]	
Land transport								
Road construction I/II	Ghana	0	450	+	0	+	-	+
Dangerous goods	China	n.a.	0	+	+	+	+	+
Passenger buses	Palestine	60	0	+	+	+	0	+
Water transport								
Xinbu dredging	China	12	50	+	+	+	+	+
Longwan dredging	China	0	64	+	+	+	0	+
Dongtin dredging	China	120	0	+	+	+	-	+
Tugs for ports	Ghana	0	0	+	+	+	+	+
Trailers for ports	Ghana	0	0	+	+	+	+	+
Air transport								
Two aircraft	Palestine	80	0	+	0	+	0	+

1 *See chapter 3.4 for explanation of the scores.*
2 *See also annex 4: summary table on financial viability. Scores are based on (expected) income generated by the project. In all cases with a zero or negative score a guarantee has been obtained for repayment of the loan.*

employment opportunities as they can be operated by existing staff. The remaining projects did generate a number of permanent job opportunities, but the real impact of transport projects is actually lodged in their wider effects on the economy in terms of solving logistic bottlenecks, providing protection against devastation and reclaiming new and productive land.

All transport projects have scored positively with regard to effects on the poor and the environment in that no adverse effects were identified. Road construction and dredging for protection against devastating floods and tidal waves is considered to be particularly positive for the poor, who stand to benefit directly from the projects. Projects such as the dangerous goods trucks and tugs are particularly positive for the environment as they curtail the potential for accidents with hazardous products. The environmental effects of roads and aircraft have been rated neutral on the one hand as their use pollutes the air.

On the other hand, however, the road offers a shorter route and the aircraft are stationed well away from urban areas.
All recipient organisations of deliverables for transport projects appeared well able to handle the materials; hence, the technical and managerial viability seems assured. In all cases the recipients had extensive prior experience with the type of equipment supplied to them. An exception is formed by the aircraft with which no such experience was available; however, an extensive training and maintenance programme, extending into the next decade, has ensured their proper handling.

The financial viability of transport projects again shows a rather mixed picture, although all loans have been properly covered by guarantees. The dangerous goods trucks, the Xinbu dredger and the tugs and trailers are already generating income, to such an extent that it is expected to cover the investment and operating costs. In the case of dangerous goods and the Xinbu dredger the project may even be commercially feasible. The passenger buses and aircraft are already generating income, but this will not be sufficient to ensure financial viability. Coastal protection near Longwan will eventually raise an income flow through the sale of reclaimed land, but this is a long-term benefit and is unlikely to cover the investment and operational costs of the project within a reasonable time frame. The roads in Ghana and dredging in Dongtin depend fully on external funding: their investment and maintenance costs cannot be covered by own revenues as these are marginal at best (tolls, maintenance fees).

The wider economic effects of transport projects are all expected to be positive. The land-transport projects ensure relief to logistical bottlenecks that impede economic activity: the roads provide access to hitherto remote areas and improve links between (future) granaries and the main ports; the buses and trucks improve the safety and reliability of services. The potential of the Palestinian buses is at present not fully exploited due to the political situation. The same applies to the Palestinian aircraft: they have already improved the movement of passengers and the export of perishables, but more optimal use will only be possible if the movement of goods and persons between the Gaza Strip and the West Bank improves. The dredging projects in China offer protection against the devastating effects of floods, tidal waves, polluted silt deposits after inundation and, of course, the persistent danger of loss of life. Economic activity in the protected areas and on reclaimed land is likely to be boosted once the incidence of disasters is substantially mitigated. The tugs and trailers are part and parcel of port

operations that are economically feasible. They have increased the capacity of ports to handle an ever-increasing flow of commodities efficiently. This has improved the competitive position of the ports, enhancing the chances for employment creation there as well as in their hinterland.

6.3 Export relevance of ORET transport projects

The export relevance of transport projects is indicated in terms of sourcing of goods and services in the Netherlands, the number of person years generated in the Netherlands, client satisfaction and the chances of further deliveries.

Table 6.3 Export relevance of ORET transactions in the transport sector[1]

Project	Country	Dutch sourcing (%)	Person years	Client satisfaction	Present chance for further deliveries
Land transport					
Road construction I	Ghana	84.6	80	+	+
Road construction II	Ghana	63.0	110	+	+
Dangerous goods	China	57.5	20	+	+
Passenger buses	Palestine	65.8	150	+	+
Water transport					
Xinbu dredging	China	92.5	54	+	+
Longwan dredging	China	63.8	45	n.a.	+
Dongtin dredging	China	67.0	153	+	+
Tugs for ports	Ghana	75.0	22	+	+
Trailers for ports	Ghana	84.8	2	+	+
Air transport					
Two aircraft	Palestine	68.0	n.a.[2]	+	-

1 *See chapter 3.4 for an explanation of scores.*
2 *This concerned two second-hand airplanes.*

The transaction value of the transport projects amounted to some NLG 300 million, generated with a grant total of NLG 142 million (Table 6.1). The grant generated the procurement of Dutch goods and services to a value of NLG 229.5 million and a minimum of 636 person-years of labour.

The recipients of deliverables for transport projects are generally strong organisations operating on commercial lines. They are well-versed in international negotiations and well-capable of securing good contracts and of expressing their wishes regarding the quality of goods and services to be rendered under the contract. All recipients were satisfied with the quality of the deliverables and often praised their excellence. Caution, however, was expressed by two clients. In Dongting, a dredger has reportedly had to wait too long for a vital spare part, while the Palestinian aircraft are relatively expensive to operate. On the other hand, suppliers have sometimes rendered services free of charge, such as replacing a poorly handled bus, providing extra truck training, and repairing stretches of road from earlier projects. In the case of Longwan, no deliveries have yet been made, but the recipient is familiar with the make and quality of the dredgers ordered.

With the exception of the dangerous goods project, a Dutch component was realised of more than the required 60 per cent. Normally, deviations from this condition require dispensation from the inter-ministerial working group, but the file does not reveal any correspondence on the matter. The difference, in terms of sourcing, between dredgers for Xinbu on the one hand and for Longwan and Dongtin on the other, is explained by the fact that in the latter cases part of the production has been done locally. The difference in sourcing between the two road construction projects in Ghana is due to the fact that part of the materials for the second road project were imported from another European country.

The road activities in Ghana are likely to have a sequel, as the Ministry of Roads and Highways showed great satisfaction with the work. The supplier has already undertaken other projects on a commercial basis in Ghana, such as the construction of a hospital in Cape Coast. In China, there is a distinct need for 300 more trucks for dangerous goods transport and the client, Sinotrans, is satisfied with the Dutch trucks. Sinotrans follows a policy of procuring from several suppliers, however, whereby concessionality levels play an important role. This also applies to the buses for the Federation of Palestinian Bus Companies: a contract for another 75 buses has been negotiated based on the availability of oretfunds. The supplier has also established relations with Israel as a result of the transaction. In the case of port trailers for Ghana, the client has expressed satisfaction with their quality and performance, as an earlier delivery is still in good shape.

The supplier of dredgers is already an established manufacturer on the Chinese market with over 100 units sold and an office for after-sales service in Beijing. He therefore stands

a good chance of winning further contracts, e.g. in the context of China's '100 dredgers programme'. The tugs were already a second delivery, but the present number seems sufficient for some time to come. In Ghana, possible orders for other ships are likely to go to the supplier, given the satisfaction of the client and the regular presence of the supplier in the country.

With respect to the aeroplanes for the Palestinian territories, the chances for further procurement of second-hand Dutch Aircraft are very small since the Palestinian Authority extends its fleet with Boeing aircraft. The airline has indicated that the five-year contract for a Continuous Technical Support Package is likely to be extended with another five years on a commercial basis.

6.4 Efficiency of ORET transport projects

The efficiency of orettransactions is measured by two criteria: the price paid for goods and services, and the occurrence of delays. The more generic issues regarding prices will be discussed in Chapter 8, in the context of the management of the ORET/MILIEV programme.

Table 6.4 Efficiency of ORET transport projects1

Project	Country	Price/quality	Duration of the project cycle
Land transport			
Dangerous goods	China	+	+
Passenger buses	Palestine	+	-
Road construction I	Ghana	+	-
Road construction II	Ghana	+	-
Water transport			
Xinbu dredging	China	+	-
Longwan dredging	China	+	+
Dongtin dredging	China	+	+
Tugs for ports	Ghana	+	+
Trailers for ports	Ghana	+	-
Air transport			
Two aircraft	Palestine	+	-

1 *See chapter 3.4 for an explanation of scores.*

The quality of the deliverables was generally high and the price/quality ratio was reasonable in all cases. Appraisal files show that prices or profit margins that were considered too high had to be corrected by the supplier before approval was given. A double check on prices and profits for some projects confirmed that they had been scrutinised.

Land transport

The prices for dangerous goods trucks were considered fair, but the appraisal has not been able to value all socio-economic benefits. Some delays in implementation were experienced due to problems in obtaining commercial credit and advance payment. Total training appeared to be significantly more than initially proposed, at the same project cost. The process for Palestinian buses was smooth, up to the time of import. Strained political relations between Israel and the Palestinians caused obstacles to timely delivery and optimal operation. The import permit was not on time, and the main hub on the West Bank, Jerusalem, could not be used. This reduced the profitably to such an extent that the concessionality of the transaction had to be increased. The road in Ghana is being constructed in phases: a first stretch was completed before 1994 and the current projects cover two more stretches. They are suffering from delays caused by late payments by the Ministry of Finance. In 1998, during the Ghanaian energy crisis, payments to projects were suspended for a long time. The supplier anticipated some of these delays by working ahead of schedule.

Water transport

Procedures for dredgers in China have been dealt with quickly and smoothly. The dredgers are of known quality as they operate all over the world. The efficiency of the Xinbu project is affected negatively by the fact that the dredger has lain idle for two years since the site for treatment of the silt was not ready. The equipment for Longwan is being built and no problems are so far expected. The dredgers for Dongtin were delivered ahead of schedule, but their actual output is less than expected by the supplier. This may be due to the long transfer distances that need to be covered (some 5 kilometres) or to the method of measurement (air photos). Also, the number of working days per dredger works out at less than anticipated: 180 instead of 288. The tugs for Ghana were delivered with a slight delay, but according to technical specifications. Their presence has increased port efficiency to such an extent that tug fees could be raised by 30 per cent.

The computerised spare part system will avoid late acquisition and double ordering. The trailers were delivered according to specification, but with a long delay caused by an investment stop by government (1995), changes in specifications, and a reduction in numbers ordered (from 66 to 24).

Air transport

The Palestinian aircraft operate at an average level of 64 per cent or 47.5 per cent in the case of pilgrim flights (when one way is empty). The Fokker aircraft are relatively dear in terms of maintenance being as expensive as a Boeing 737 which carries double the capacity. The Fokker 50s are less suitable for freight as they have no separate cargo compartment. Political restrictions with regard to landing rights have meant delays in delivery and cause operations to be sub-optimal.

6.5 Issues

The dredging projects have been appraised without field visits. These could have been beneficial for recurrent project proposals in a sector, as several issues could have been foreseen. For example: other than indicated in the appraisal, the price for a cubic meter of dredged silt proved to be far from rigid in China. Such prices changed over time and were sometimes related to the expected value of the output of the project. Those values varied considerably. Some projects could have been justified as MILIEV projects as their objectives are fully environmental. One project, although environmental in set-up, proved commercially viable in the longer term. This signals a particular feature of dredging projects: the value of reclaimed land, which had not been taken into account at the time of appraisal.

In the case of dangerous goods transport, the project is commercially viable. It should have been asked whether the recipient organisation, one of the largest transport companies in the world, required support in this form. A similar question could be asked with regard to suppliers: does a company with a strong foothold on the market, as is the case with dredgers, require support from ORET or MILIEV? The findings indicate that such suppliers, or their clients, would only merit support if they handle projects that are relevant to the public or environment, and do not generate sufficient financial benefits that accrue to the recipient institution.

A related issue is that even suppliers with a firm market share may require continued support to maintain that share vis-à-vis other suppliers enjoying some form of government support. It is important in such cases to avoid complacency on the side of established suppliers that may lead to reduced levels of service.

In many cases, wider economic effects of a project have been identified during field visits than were initially foreseen during appraisal (e.g. some dredging projects and road projects). It would be worthwhile for recurrent applications in a sector to study possible economic effects and their quantification.

7 Evaluation ORET: Agro-industry

7.1 Description of selected projects

The field study for agro-industrial projects supported by ORET comprised visits to two projects in China, both of which were smaller than SDR 2 million (NLG 5.4 million). An overview of the visited projects is given in Table 7.1; a complete overview of this category is provided in Annex 3.

Table 7.1 ORET: Overview of agro-industrial projects selected for field visit* (amounts in NLG millions)

Year of approval	Sub-sector	Transaction amount	Grant amount	Country	Project status
	Agro-industry				
1994	Layer project Sanya	4,814	1,926	China	Ongoing
1996	Feedmill Sanya	4,150	1,660	China	Finalised

* *See map 3 on page xiv for project location.*

Chicken layer farm, China

The construction and running of a chicken layer farm and a feedmill is part of a broader development, which has to be seen in the more general context of the Chinese Government's 'Food Basket Programme' and of Hainan's status as 'Special Economic Zone'. The latter has been the main driving force for Hainan's strong growth since 1988 and focuses on tourism and food production, i.e. the two main growth sectors. The growing economy has provided an additional boost to the demand for more food in greater variety. At the time of the request for ORET support, Hainan had virtually no chicken or egg production even though demand has been sharply increasing. The annual market is estimated at some 123 million eggs by the year 2000. To satisfy this expected demand, projects have been initiated by the Hainan Economy and Technology Development Corporation, for which oretsupport has been received: a feedmill and a chicken layer farm. The projects are located at Taindu Town farm.

The layer project aims to produce annually more than one hundred million eggs for consumption as well as four million breeding eggs and to rear 315,000 laying hens per year on an area of 28 hectares. The transaction concerns the standard type of integrated layer farm. It comprises part of the equipment and materials needed to set-up the layer-houses, rearing-houses, parent stock-houses, and the hatchery. In particular it includes the purchase of lighting systems, drinking water systems, cooling, heating and ventilation systems and feeding systems. Locally-produced equipment will complete the project (e.g. layer and rearing batteries, egg collection layer batteries, drinking water systems for the batteries). A secondary objective of the project is the more efficient utilisation of locally-available grain stocks that are being sold at prices fixed by the public sector.

The layer project is not yet operational due to last-minute technical changes and to end-users' loan problems with local banks. The goods have been delivered and are on site. Given the ready market for feed, poultry meat and eggs, the project is expected to provide substantial commercial benefits. This expectation is also based on the client's virtual monopoly for these products on the island of Hainan, where eggs are 15 to 30 per cent more expensive than elsewhere in China. There is therefore little doubt that the project will be commercially viable. The layer project provides for training and supervision during installation and the run-in period.

Feedmill, China

The Government of China foresees a shift in its national grain production strategy beyond the year 2000 as a result of a shift in the consumption pattern. Effectively, the direct per capita consumption of grains is expected to fall, allowing more of grain production to be converted into animal protein. The Government gives high priority to the development and modernisation of dairy cattle and beef cattle raising and to increased production of the pig, poultry and aquaculture sub-sectors.

Hainan has a relatively well developed pig raising industry, but poultry and aquaculture remain minor activities. Total feed requirements are satisfied for less than a third by own production, placing Hainan among the five provinces with the highest deficiency in animal food production. The growing demand for manufactured feed is indisputable. To meet it, the Government decided on a strategy of intensifying feed crop production and increasing national milling capacity. The Sanya feedmill project which, together with the

chicken layer project, was developed by the Xiangsi Provincial Agricultural Surveying Institute, fits within this general framework. It comprises the construction of a feedmill, with a capacity of 48,000 tons per annum, to produce high quality feed for pigs, poultry and shrimps. The contribution by the Dutch contract partner is restricted to delivery of the feedmill, including the complete machinery, spare parts for two years, supervision during construction and testing, training in the Netherlands and on-the-job of operators and maintenance staff (40 persons in the fields of operation, maintenance and repair, power distribution and laboratory operations), procurement of drawings for civil works and steam installation, a full service guarantee for a year and after sales service. The weighing bridge, trucks, steam boiler and compressed air installations are produced locally, and the civil works are carried out by local contractors.

The feedmill installation is virtually completed, but the project is not yet operational. It may already be said, however, that the ready market for feed will provide substantial commercial opportunities. This is based partly on the virtual monopoly of the client for these products on the island of Hainan. At present, processed feed has to be imported from the mainland. The mill is situated close to the production centres, i.e. state farms raising pigs and specialised farms. The technology involved with the feedmill and the layer project is well known to the client, whilst premises, support structures and the grinding system provided by the client are fully adequate.

The feedmill will recycle organic waste materials; no waste will be discharged that is damaging to the environment as all materials will be used. Dust and noise emissions will be minimal as the design of the equipment includes sealings and aspiration systems. The project will stimulate shrimp production which, in turn, will increase soil erosion if ponds are abandoned after only a short period of use.

7.2 Development effects of ORET agro-industrial projects

The development effects of oretagro-industrial projects are assessed in terms of permanent and temporary employment effects, poverty alleviation, and environmental, technical and financial viability, as well as possible wider economic effects on the recipient economy.

Table 7.2 Development relevance of ORET projects in agro-industry[1]

Project	Country	(Expected) direct employment creation		Lack of negative effects on the poor	Environmental effect	Expected viability		Expected wider effect on economy
		Perm.	Temp.			Technical/ managerial	Financial[2]	
Feedmill	China	72	70	+	0	+	+	+
Layer project	China	50	70	+	+	+	+	+

1 *See chapter 3.4 for an explanation of scores.*
2 *See also annex 4: Summary table on financial viability. Scores based on (expected) income generated by the project. In all cases with a zero or negative score, a guarantee of repayment of the loan has been obtained.*

The feedmill and layer projects in Sanya are about to become operational and will lead to the direct employment of staff. The operation of these projects will have no adverse effects nor distinct positive effects on the poor. Eggs and poultry do not form part of the diet of the poor, indigenous population, and the feedmill will operate for state farms rather than for small producers. The production processes are environmentally friendly, but the feedmill will stimulate shrimp production and cause erosion through the relatively short use of ponds.

The technical and financial viability of the projects is assured, as the state company running them has ample experience with similar processes; moreover, the whole operation is

commercially feasible in view of the demand gap for feed and poultry products. Long-term effectiveness in terms of employment is considered positive for both projects, as they cater for the needs of tourists and substitute for expensive 'imports' from the mainland. The island of Hainan has been designated for tourism rather than industrial development, and the recent construction of a large amusement park near Sanya is attracting an increasing flow of tourists. This is creating ample employment opportunities, also for the indigenous poor in the region.

7.3 Export relevance of ORET agro-industrial projects

The export relevance of agro-industrial projects is indicated in Table 7.3 in terms of sourcing of goods and services in the Netherlands, the number of person years generated, and the chance for further deliveries.

Table 7.3 Export relevance of ORET transactions in agro-industry[1]

Project	Country	Dutch sourcing (%)	Person years	Client satisfaction	Present chance for further deliveries
Feedmill	China	95.0	14	n.a.	+
Layer project	China	79.0	27	n.a.	+

1 *See chapter 3.4 for an explanation of scores.*

The satisfaction of the client cannot be established since the materials have not yet been completely installed and the project is not yet operational. So far, the client is satisfied with the quality of the work.

The transaction value of the agro-industry projects amounted to some NLG 8.9 million, generated with a grant total of NLG 3.6 million (Table 7.1). The grant generated the procurement of Dutch goods and services to a value of NLG 7.9 million and a total of 41 person years of labour.

The growing consumer demand for meat and poultry products in China has created a market for feedmill installations as well as for poultry meat and egg production projects. Both suppliers have previously delivered to China and there are sufficient market opportunities for further sales. The client, the Hainan Economy and Technology Development

Corporation, has expressed its satisfaction with the quality of the delivered goods. As they are turn-key projects, the Dutch component is relatively high.

7.4 Efficiency

The efficiency of the orettransactions is measured by two criteria: the price paid for goods and services and the length of the process in relation to the expectations of client and supplier. The more generic issues regarding efficiency will be discussed in Chapter 8, in the context of management of the ORET/MILIEV programme.

Table 7.4 Efficiency of ORET agro-industry projects[1]

Project	Country	Price/quality	Duration of the project cycle
Feedmill	China	+	-
Layer project	China	+	-

1 *See chapter 3.4 for an explanation of scores.*

The quality of the deliverables was generally high and the price/quality ratio was reasonable in all cases. Appraisal files show that prices or profit margins that were too high had to be corrected by the supplier before approval was given. A double check on prices and profits for some projects has confirmed that they were thoroughly examined.

The appraisal process of the feedmill and layer projects has been delayed as they were conceived as one commercially viable project with one recipient organisation: the Hainan Economy and Technology Development Corporation. After they were separated, each component was less than SDR two million and delivered to different divisions of the Corporation. Grants could be approved notwithstanding the commercial viability of the projects. Implementation of the feedmill project has been severely delayed by unforeseen difficulties with the electricity supply and a reform of the banking system that has held up the securing of a commercial loan. As a result, the nearly finished project has been hindered since December 1997. The electricity problem has been solved, but funding problems still await solution. Implementation of the layer project has also been delayed due to last-minute technical changes in the specification and to banking problems.

7.5 Issues

The projects in Sanya have been supported by ORET on the basis of a technicality: two projects with different suppliers, each of which was commercially viable, and each with a value of less than SDR two million. The twin projects are operated by different divisions of the same local-government corporation on the same location.

The issue is not whether the projects should have been conceived as one: the Consultation Group forbids the cutting-up of projects and the separation of the two has been accepted. The question is rather whether projects that are so obviously viable should receive ORET funding; moreover, there seems to be little risk involved (contrary, for example, to the commercially viable but risky biomass project in India).

8 ORET/MILIEV PROGRAMME MANAGEMENT

Management of the ORET/MILIEV programme is particularly concerned with the steps of the 'project cycle': processing of applications, awarding of contracts and monitoring through regular progress reports by suppliers, as well as with the annual budget. Earlier chapters have provided an insight into the implementation of projects, with occasional reference to the quality of appraisal, conditioning and reporting. To enhance the understanding of management aspects, several desk studies have been undertaken which took their cue from issues arising from the files of projects selected for field visits. The findings of these desk studies relate to three aspects of programme management: the various steps in the project cycle, the 'stop - go' problem, and ORET/MILIEV programme conditions. The desk studies and brief indications of their objectives are listed below.

Desk study:	Providing information on:
File study on 20 finalised projects in countries not covered by the field study	Duration of project-cycle steps, quality of reporting
Survey among 43 out of 63 suppliers	Project cycle, conditionality, export perspectives
Check on price comparisons and methodologies used	Appraisal
Study of internal correspondence and interviews	'Stop - go' problem

The detailed objectives of each study are mentioned in Chapter 3, whilst Annexes 5 and 6 provide synopses of findings of the desk study on finalised projects and the survey respectively.

8.1 The ORET/MILIEV 'project cycle'

The steps for processing applications for ORET/MILIEV support are clearly laid down in documents by the Ministry of Foreign Affairs and regularly updated. Since 1996 these steps, and their indicative timing, have been as follows.

Step 1 (two days)

Receipt by the Ministry of Foreign Affairs (Private Sector Department) of the completed application form from the supplier and its onforwarding to the Inter-Departmental Project Committee (IPC); confirmation of receipt and conditions for further processing sent by the Ministry to the supplier; telling NEI to start appraisal procedures; and sending possible additional questions to the relevant embassy.

Step 2 (six weeks)

Appraisal study by NEI and gathering of additional information from supplier, client, recipient government, sectoral specialists, etc. and the writing up of an extensive appraisal report.

Step 3 (two weeks)

Discussing the appraisal report with the applicant and, if required, adjustment of the application.

Step 4 (one week)

If adjustments are made to the application, NEI's appraisal report will be finalised on the basis of the new information and comments by the Ministry of Economic Affairs (with a view to the notification in Paris).

Step 5 (six weeks)

The application will be sent to the Consultation Group in Paris through the Ministry of Economic Affairs, that will defend the proposal in Paris. Simultaneously, the Ministry of Foreign Affairs will appraise the proposal (two weeks).

Step 6 (one week)

The supplier will be notified by the Ministry of Foreign Affairs of the outcome of the appraisal process and of the decision in Paris. If the outcome is positive, the supplier is allowed one week to confirm his acceptance of the offer.

Step 7 (one day)

As soon as the green light has been received from the Consultations Group, NIO is told to offer the grant formally to the government of the recipient country, under the conditions stipulated for its acceptance.

8.1.1 Application

The survey showed that almost 80 per cent of suppliers consider the procedures and forms for ORET/MILIEV funding to be clear or reasonably clear. Those who complain about lack of clarity are mostly newcomers who have trouble in familiarising themselves with the particular conditions and requirements of the programme.

Project files show, however, that many applications are not complete; some companies experience difficulty in obtaining all the necessary information. They then rely on NEI to extract this information from recipients. Some suppliers hope to obtain greater leverage during this formal appraisal process. It is the willingness of recipients to answer additional questions, however, which determines the ultimate length of the process.
Almost all respondents indicated that ORET/MILIEV funding was required to realise a project that, in their opinion, would otherwise not have gone through. A few believed that the deal might have gone through anyway with other suppliers. In almost half the cases the client had indicated a clear preference for products or services of Dutch origin. This was usually related to a certain uniqueness of the product or service, in combination with the possibility of concessional funding. This uniqueness is closely related to the fact that many transactions are well-tailored to the needs of the client: some three-quarters of the suppliers have realised contracts with ORET/MILIEV support through direct negotiations. The preparation of contracts is usually a costly affair and tailor-made transactions are less likely to be lost to competitors. Competitive bidding procedures also require costly preparations, whilst the chance is relatively large that the tender will be won by another supplier. Hence, there is less opportunity to recover preparation costs.

Half the suppliers participating in the survey indicated that they faced, in principle, competition from local firms. The latter were usually not able to deliver international quality standards, however, or to handle large projects with clear performance guarantees. Also, local markets for some of the imported capital goods are often too small to allow economies of scale for local companies. In the longer run, however, such companies are expected to absorb modern management principles and technology, as many suppliers predicted that their technology would eventually be transferred to local producers.

8.1.2 Appraisal

The previous IOV evaluation (1990) of the predecessor of ORET/MILIEV, i.e. the mixed credits programme, concluded that the appraisal of transactions with regard to their develop-

ment relevance had been inadequate. As a result, evaluated transactions were largely over-designed (60 per cent), technically inappropriate (one-third), and their economic viability was only marginally positive. With regard to the latter, it was further remarked that employment and import substitution effects were difficult to assess. After 1991, ORET transactions were more seriously appraised and a mission-intensive approach followed in investigating the development relevance, pricing and technological appropriateness of the applications.

In course of time it was felt necessary that appraisal procedures should be further improved. NEI was asked to develop an appraisal framework for the evaluation of ORET applications, requiring less missions, and to test it on a pilot basis. That framework eventually became the appraisal profile with which NEI has won every subsequent annual tender for appraisal of ORET applications. The main advantage was the reduced need for missions and the systematic approach which took account of all Consensus conditions and calculation methods. The general structure of appraisal reports can be found in annex 7, which also provides an impression of the various elements that constitute the appraisal phase.

Files of projects covered by this review show that appraisal reports have improved over the years. In the last few years in particular, they have become more systematic and uniform in their method and calculation. NEI has developed checklists for sectors that make repeated requests, such as: dredging, fleet development, drinking water, health, water treatment and sewerage. These lists are conducive to the efficient processing of applications for ORET/MILIEV funding: close scrutiny of applications for export support has given rise to useful adaptations in transaction or project design, training proposals and their pricing.

Some problems still attach to present appraisals:

- most questions raised during the appraisal phase have to be dealt with through correspondence with recipient governments and clients. This mission-poor approach during appraisal prevents a build-up of sectoral knowledge that could be used in new appraisals: some first-hand knowledge is of greater value than knowledge obtained through correspondence (e.g. the validity of output prices, possible problems during implementation, strengths and weaknesses of the recipient, calculation of environmental and/or economic effects, etc.);

- the lack of an adequate monitoring, evaluation and feedback system prevents any empirical knowledge on implementation problems, successes and failures from flowing back to the Private Sector Department and the appraising consultants;
- specialised Directorates of the Ministry of Foreign Affairs and participants of the Consensus often raise issues during appraisal which cannot easily be solved. A recurring issue, for example, is the price of public goods; if these are subsidised, the commercial non-viability is often considered artificial. These and other principal issues are not able to benefit from structural solutions through feedback and fact finding missions;
- the knowledge base among decision makers and appraising consultants is still narrow with regard to the (quantification of) actual economic and environmental effects, even in sectors that are regularly targeted by ORET/MILIEV transactions. Examples include: wind energy, drinking water, sanitation, health, different modes of transport and water infrastructural works.

The survey further revealed that the length of the appraisal process is a major irritation to suppliers. Companies and their representatives consider procedures unduly long and frequently stress the need to simplify them or to accelerate the processing of applications. The Ministry has shortened the period for processing to four months. In practice, suppliers have to agree to a period between five and six months as most applications are incomplete (some problematic projects take much longer). A substantial time is spent waiting for additional information from the field. The timeframe of four months for appraisal has been realistic only in the case of relatively straightforward projects for which application forms were fully completed at the outset.

In the survey, suppliers indicated that only a third of appraisals were processed within a year. This is not in line with the findings of the desk study and the periodic reporting by NEI. Most probably, suppliers have included the time taken by negotiations leading to submission of a formal application for ORET/MILIEV funding in their assessment. Several suppliers also thought that the use of external experts in appraisal would obscure and delay the appraisal process. The project files show only a very marginal time effect in such cases, however. External advice is now sought in 90 per cent of appraisals; time-consuming projects are not delayed as a result of the use of external consultants.

8.1.3 *Prices and profits*

The desk study on price checks covered 17 transactions, for which prices were double-checked through comparison with competing offers and prevailing market prices, or with standard prices taken from e.g. 'Operating Costs Standards for Construction Equipment'. No anomalies were found, since suppliers had been asked to corroborate the justification of their price levels or profit margins when these were found too high. This had been the case for four of the 17 projects. If the supplier was not able to provide sufficient justification for either price or profit level, a downward adjustment was required; this happened in one case. Some high profit margins reflected lack of competition for certain products, whilst products in some highly competitive sectors enjoyed only marginal profits.

Price checks appeared to have been carried out with utmost care, heeding conditions set by the Ministries of Foreign Affairs and Economic Affairs. The price checks have realised important economies, as project files regularly contain correspondence related to downward price adjustments. The very knowledge that such a check will be performed will also have had a preventive value. Price checks, however, are complicated by the following factors:

- no single method can be applied as the composition of transactions differs strongly: some projects comprise many small items from various suppliers, while others comprise only a few or even one object from one supplier;
- some transactions are custom-made, hence comparison with regular market prices for similar transactions is difficult;
- price checks are performed during and not before the appraisal process. If the appraisal is positive and the price too high, negotiations to bring the price down are very difficult. In practice, data required for thorough price checks only become available during the appraisal process;
- cost breakdowns provided by suppliers are not uniform within sectors. This renders a quick comparison difficult.

8.1.4 *Securing commercial credit*

After the proposal has been approved by the Private Sector Department, the Interdepartmental Project Committee and the Consultation Group, the supplier has to confirm his offer. Subsequently, NIO offers the grant to the recipient government. The recipient then has to secure a commercial credit for the non-grant share of the transac-

tion cost, after which a start can be made with deliveries. Funding of the non-grant share may be through commercial loans, the end-user's own means, or government funds. In most countries, procedures for obtaining commercial loans or the allocation of government funds are subject to time-consuming procedures. The issue of necessary guarantees, government budget constraints, frequently-changing bank rules, etc. make the process lengthy and insecure. Sometimes, the supplier actively helps in the process since loans are often obtained from a Dutch bank. The ORET/MILIEV programme allows six months for securing necessary funding, to be extended by six months or a shorter period if the client so requests. Such extensions are only allowed if the chance for funding is reasonable. If chances are bleak, the grant offer is withdrawn.

The evaluation shows that delays in finding commercial funding have been substantial in many cases, sometimes actually leading to withdrawal of the grant. This process is basically the client's problem, but suppliers are often heavily engaged as it is in their own interest that the loan or budget allocation should be secured. In some cases the Dutch embassy is requested to exert pressure on the recipient government to speed-up the process or to point out the risks involved in further delay.

The average period from approval by the Private Sector Department to delivery of materials in the recipient country appeared to be more than 16 months. The period required for securing a loan and acceptance of the grant by the recipient government thus seems to be very time-consuming: thrice the average time taken for appraisal.

8.1.5 *Implementation*

In more than half the projects covered by the desk study, problems were reported during implementation, all of which led to delays. Their nature was manifold, but the majority were institutional problems on the recipient side (including political unrest). Discussions about technical details and delays in local transport were also frequently reported. In a few cases, the recipient had deviated from the contract: on rare occasions this had required the Private Sector Department to demand repayment of the grant.

Once the funding of transaction costs has been secured, the supplier can start production. Project performance in the implementation phase shows widely-varying results with regard to timeliness. Some projects are completed according to schedule, while others drag on for years: a delay of several years is no exception. Projects that are usually com-

pleted on time are those that comprise the delivery of capital goods prepared and built in the Netherlands. Projects involving civil construction works by the recipient usually take the longest. Other delays have been caused by late payment of loan instalments by banks or governments, problems regarding import duties, incompatibility of design, etc. Several such problems are of a recurrent nature and/or country-specific.

The lack of adequate monitoring means that the only source of information on implementation is the mandatory six-monthly reporting by the supplier. Both desk and field studies have shown that these reports are often of an obligatory character and too meagre to highlight important issues. Field visits further showed that some important problems were omitted from suppliers' progress reports. These findings were corroborated by the desk study: of the 20 project files, only 11 contained adequate progress reports. Five suppliers had sent no progress reports at all, or only the final document. In four cases, reports were brief and incomplete. The implication is that reporting does not provide a good monitoring instrument, and that suppliers have not been sufficiently urged that their reporting should be improved upon. Some suppliers have quite a poor reporting record in that their reports have been inadequate for more than one troubled project.

8.2 The 'stop - go' phenomenon

The value of transactions supported by the ORET/MILIEV programme has varied from several hundreds of thousands to almost a hundred million Dutch guilders. With a concessionality of some 40 per cent, this means disbursements ranging from several hundreds of thousands to some 40 million Dutch guilders, out of a budget of 200 to 300 million guilders during the evaluation period. With almost a hundred projects in progress and in the pipeline, i.e. committed grants, the chance for disbursement fluctuations is very large given the uncertainties described above: the length of the appraisal process, the time needed for obtaining non-grant funding by the recipient, and the speed of the implementation process (e.g. uncertainty about the timely release of grant instalments, or institutional obstacles).

One way in which to deal with such uncertainties has been to estimate the percentage of applications that mature into ORET/MILIEV-supported transactions. This allowed the acceptance of more applications than the budget could allow if all were to mature into successful transactions. Conservative estimates, however, led to structural underspending of the budget. Consecutive years of underspending led to the acceptance of more and

more applications, in the hope of taking-up almost the full ORET/MILIEV budget. The acceptance of more applications, combined with a learning process among applicants (more applications matured into grants), caused cash funds to become exhausted in 1997 and led to closure of the counter for new applications.

When the budget nears depletion, few elegant solutions are available with which to stem the tide. Closing the counter for new applications is the most drastic of these. Measures to temper the flow of disbursements, and thus to prevent suspension of the programme, include adjustments to the maximum grant level allowed per beneficiary country, to levels of concessionality, to the number of transactions per supplier, to the exclusion of very large projects or small commercially viable projects, etc. All these measures are bound to raise objections by suppliers who will be omitted. Suspension of the programme in 1997 seemed to be more just as it equally affected all suppliers; however, it led to a queue of applications which resulted in similar problems in 1998. On the other hand, however, a suspension that lasts too long will deplete the pipeline by creating a caesura in applications.

The reduction of concessionality levels in January 1998 to a maximum of 35 per cent (or 50 per cent for LDCs) will also increase the possibility of underspending in that more transactions will need to be realised.

8.3 ORET/MILIEV conditionality

The survey has asked suppliers who have benefited from the ORET/MILIEV programme to give their opinion on its principal conditions: on the one hand, export relevance in terms of having to source 60 per cent of the deliverables in the Netherlands and the ability to sustain a longer-term trade/investment relationship with the recipient country; on the other hand, the requirement to keep in line with the main objectives of Dutch development policies.

Sourcing goods and services in the Netherlands

More than 80 per cent of the suppliers regard the condition that 60 per cent of supplies have to be sourced in the Netherlands as being reasonable. The rather high percentage is no coincidence: the conditions of the ORET/MILIEV programme particularly attract suppliers who are themselves producers, and/or are able to obtain parts elsewhere in the

Netherlands. The remaining suppliers who are against the 60 per cent condition are predominantly involved with MILIEV energy projects, or principally assemble their export products in the Netherlands.

Despite adherence to the 60 per cent condition, some critical remarks were made by the suppliers:

- due to the method of calculation, the actual Dutch component may be well below 60 per cent (even as low as 30.6 per cent) although officially a share of 60 per cent or more is presented;
- some suppliers claim that calculation of the actual Dutch content is difficult or even impossible to make;
- to satisfy the 60 per cent condition, products or parts thereof are often sourced in the Netherlands while cheaper alternatives are at hand in other European countries or in the recipient country;
- several suppliers (and their clients) consider it reasonable to link the level of concessionality to that of sourcing: for example, a grant of 35 per cent would require the supplier to source 35 per cent in the Netherlands. (Note: given the calculation method allowed, this could lower the actual Dutch content to some 17 per cent.)

Long-term relations

A majority of suppliers (67 per cent) already had some form of relationship with the recipient country before applying for ORET/MILIEV support in the period under evaluation, often due to earlier ORET/MILIEV transactions. Most suppliers have since established a more permanent representation in the form of a local agent, representative or office. This continued presence in the recipient country is expected to be conducive to the exploration and realisation of further trade opportunities.

Half the respondents reported having had a direct spin-off from the ORET/MILIEV contract in the form of follow-up orders; another 35 per cent indicated that they stood a fair chance of negotiating a new contract. In this connection, many added that further ORET/MILIEV support would be necessary in their line of business, as there was little opportunity for commercial deals. Optimism about further deals is also reflected in the rating for joint ventures and investment: some 42 per cent are already engaged in some form of cooperation (mostly joint ventures), whilst 26 per cent considers closer forms of

cooperation. Suppliers who do not contemplate any form of durable local investment are mainly advisers and trading companies.

Annex 1 The Policy and Operations Evaluation Department (IOB)

The Policy and Operations Evaluation Department, in Dutch the Inspectie Ontwikkelingssamenwerking en Beleidsevaluatie (IOB), is responsible for conducting evaluations of Dutch foreign policy.

IOB is part of the Ministry of Foreign Affairs. It is an independent unit which reports directly either to the Minister of Foreign Affairs or to the Minister for Development Cooperation. The Minister concerned submits IOB reports to Parliament, where they are discussed by the Permanent Committee on Foreign Affairs with respect to follow up actions.

IOB was established in 1977 with a mandate that was restricted to the evaluation of aid programmes. Following the reassessment of Dutch foreign policy in 1996, IOB's mandate was broadened to include other fields of foreign policy.

From 1977 to the mid-1980s, IOB's emphasis was on individual project evaluations, the status of which was then confidential. Since the mid-1980s, emphasis has shifted to comprehensive thematic studies, focusing on policies and modalities of implementation and covering sectors, themes or programmes. External independent experts participate in the various phases of the research, under IOB's responsibility. Increasingly, institutions or experts in recipient countries are invited to participate in the fieldwork. A reference group consisting of independent experts and Ministry staff is appointed for each study to advise on the methodology and approach of the evaluation.

The final reports, based on various field and desk studies, are written by IOB's own staff and published under its responsibility. Examples of recent thematic studies include: Evaluation and Monitoring, Inter-institutional Cooperation in Higher Education, Humanitarian Aid to Somalia, Environment and Development Cooperation, Fertiliser Aid, the programme of the SNV development agency in Nepal and Benin, Women and

Development in Kenya and in Burkina Faso, the Matra programme of assistance to Central and Eastern Europe and Co-financing between the Netherlands and the World Bank.

In 1994 studies were published on the Netherlands' country programmes in India, Mali and Tanzania. In 1998, similar studies followed on programmes in Bangladesh, Bolivia and Egypt. The latter studies also gave attention to non-aid bilateral relations between those countries and the Netherlands, in accordance with IOB's new mandate.

IOB also participates in multi-donor evaluations. Examples of this include the evaluation of: Rural small-scale industrial enterprises (UNDP, ILO, UNIDO), the World Food Programme, the European Union Programme Food Aid, Emergency Assistance to Rwanda, European Union Aid: ACP, MED, ALA Programmes and Humanitarian Aid, and the United Nations Capital Development Fund (UNCDF).

Annex 2 Organisation of the study

1 Background

The IOB has carried out several evaluations that included Dutch companies or private sector development in developing countries. Contracting out: Bane or Blessing (1989), evaluated the effectiveness of development projects contracted-out to Dutch organisations or agencies vis-à-vis projects under the direct management of the Ministry of Foreign Affairs. Import Support was also published in 1989, and examined the effectiveness of commodity aid to private companies in developing countries. In Aid or Trade (1990), the mixed-credit programme was evaluated. This programme, predecessor of the ORET/MILIEV programme, was assessed with respect to its export and development relevance. Fertiliser Aid (1995) evaluated the effectiveness of fertiliser provided as programme aid to developing countries. A large part of fertiliser aid was provided by Dutch companies. Finally, various country studies (1994, 1998) have also discussed the effectiveness of aid provided to companies in different recipient countries.

This review of the ORET/MILIEV programme is made at the request of the Dutch Parliament. Many questions had been raised with regard to the development relevance of a tied aid programme such as ORET/MILIEV, and such a review was considered necessary. Parliament in fact requested an evaluation of all private sector development instruments of the Ministry of Foreign Affairs. Several of these, however, had either been recently evaluated or were relatively new. Hence, it was decided to limit the evaluation to ORET/MILIEV.

2 Approach

The first step in preparing the study was to create a data base on completed, ongoing and committed transactions in the evaluation period. A desk study was undertaken of relevant background papers, policy documents, project files, progress reports and correspondence. Based on this information, a sample for field visits was drawn among finalised and ongoing projects that had benefited from ORET/MILIEV-supported transactions. All selected projects were subsequently scrutinised and their files condensed for use by the field missions. This work was carried out by Ms Mireille Smit and Ms Sacha Koppert.

In the period February through May 1999, field missions were undertaken to the selected countries by the IOB coordination team. This comprised Messrs F.A. Makken, IOB

Inspector, and G. de Monie of Policy Research NV, Antwerp, for missions to China, India and the Palestinian territories. The mission to Ghana was carried out by Messrs Makken and J. Nietvelt of Policy Research NV. Additional fieldwork for the health and electricity porjcets in Ghana was carried out by mr Bert Kamphorst, free-lance consultant. Visits to various sites in the selected countries were coordinated by the respective Dutch Embassies: Mr E.H.W. van den Akker in Beijing, Mr E.A. Noorman in New Delhi, Mr J.A.M. de Zeeuw in Accra and Ms C.M. Trooster in Ramallah. In China the IOB team was accompanied by Dr Xiansheng Li, interpreter.

Mr Joel van der Beek of Policy Research NV carried out the desk study on finalised projects in beneficiary countries not visited by the mission. Mr van der Beek and Ms Smit provided back-up support to the missions during preparation and implementation of the fieldwork. The desk study on price checks was carried out by Mr F. Vos of the Netherlands Procurement Centre (NIC), Zwolle. The survey among suppliers and the file study on procedural issues were carried out by Mr Makken.

Case studies of each project visit were drawn up by Messrs de Monie and Nietvelt respectively. These studies, which formed the basis for the evaluatory chapters in this report, were sent for comment to the concerned suppliers in the Netherlands. The final report was drawn up by Messrs Makken and de Monie.

3 Coordination

The study was coordinated by Mr F.A. Makken of the Policy and Operations Evaluation Department. As is customary, IOB appointed an advisory group to advise on the methodology and approach of the study, and to comment on the findings of field studies as well as on drafts of the final report. The membership of that advisory group was as follows:

External:

Prof. Dr P.K. Jagersma	Nijenrode University
Prof. Dr N.J. Schrijver	Free University, Amsterdam and Institute of Social Studies, The Hague
Mr A. Kraaijeveld	Association of Dutch Enterprises, FME/CWM
Mr R.J. Tjeerdsma	Confederation of Netherlands Industry and Employers, VNO-NCW
Messrs R. Serry and A. van Ravestein	Market Development Department, Ministry of Economic Affairs

Internal:

Ms H.I. von Metzsch	Director IOB upto July 1999
Mr R.D. van den Berg	Director IOB as from August 1999
Mr T.J. Kliest	Inspector IOB
Mr D.C. van der Hoek	Inspector IOB
Dr T. Segaar	Inspector IOB
Mr J. Ramaker	Private Sector Department

ANNEX 3

ORET/MILIEV TRANSACTIONS < 2 MILLION SDR (APPROX. NLG 5.4 MILLION)

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
MILIEV								
Energy and energy saving								
Wind turbines	4,677	2,154	Egypt	H-Energy	1993	O		
Biomass briquetting	4,584	1,834	India	Densitech	1996	O	*	
Demonstration Low NOx Burners	2,400	2,400	China	Stork Ketels	1995	O	*	
Biomass briquetting	1,045	627	Uganda	Densitech	1993	F		*
Polyethylene foam isolation production	530	212	Thailand	THERMAFLEX	1993	F		*
Efficient lights	323	258	Peru	ECN	1995	F		*
Efficient lights introduction	300	215	Pakistan	ECN	1995	F		
Solar photovoltaic energy	298	238	Bolivia	BTG	1994	F		*
Rural electrification	276	223	Philippines	BTG	1995	F		*
Photovoltaic rural energy	259	207	Kenya	ECOTEC	1995	F		*
Studies/plans								
Korangi development plan	1,302	781	Pakistan	Haskoning	1996	F		
Marine environmental masterplan	464	279	Philippines	Maritime Syst.Techn.	1996	F		

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
Pollution control action plan	265	207	Sri Lanka	BKH	1996	F		
Sanitation								
Waste water vicotex	4,622	3,338	Vietnam	PEJA A	1996	O		
Processing of slaughterhouse waste	2,490	1,497	Ethiopia	Peja A	1994	O		
Sewerage installation Harare	1,700	1,360	Zimbabwe	Ebbens	1996	O		
Sewerage supervision Addis Ababa	1,000	600	Ethiopia	DHV	1997	O		
Sanitation (continued)								
Waste management plan Cebu City	622	363	Philippines	Solid Waste Cons.	1996	O		
Waste policy plan	451	217	Vietnam	ARA	1995	F		*
Agriculture								
Weed harvesting systems	2,025	1,215	Uganda	PEJA A	1995	F		*

ORET public services

Sanitation								
Accra water supply rehabilitation	4,552	1,452	Ghana	Haskoning	1998	O		
Health								
Zambezi paramedical centre	801	480	Zambia	Otto Bock Benelux	1997	O		
Other								
Wildlife film production	4,700	2,847	Tanzania	NCF	1996	O		

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
ORET-infrastructure								
Road transport								
Dangerous goods transport	4,967	1,987	China	DAF trucks	1996	F	*	
Water transport/ports								
Tugboat	5,153	2,319	Costa Rica	Damen Shipyards	1996	F		
Stabilised tidal inlet system Cartagena	5,153	2,375	Colombia	Haskoning	1994	O		
5 Ferries	5,018	2,760	Gambia	Damen Shipyards	1993	F		*
Tugboat	4,770	2,198	El Salvador	Damen Shipyards	1996	O		
5 pilot boats for Skikda/El Djedid	4,558	1,823	Algeria	Damen Shipyards	1995	F		*
5 pilot boats for Arzew	4,558	1,823	Algeria	Damen Shipyards	1995	F		*
4 pilot boats for Algiers	3,645	1,458	Algeria	Damen Shipyards	1995	F		*
24 harbour trailers	1,069	427	Ghana	Buiscar	1995	F	*	
ORET-agro/processing industry								
Convenience food processing	5,400	2,430	China	UNISONO	1998	O		
Starch processing	5,138	2,250	China	NIVOBA Eng.	1997	O		
Layer project Sanya	4,814	1,926	China	Heesen Technocom	1994	O	*	
Sanya broiler project	4,767	1,907	China	Stork PMT	1996	O		
Bleach and dye unit	4,634	1,854	Vietnam	Brugman	1994	F		*

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
Daying duck feedmill Shanghai	4,255	2,031	China	Heemhorst	1998	O		
Feedmill Sanya	4,150	1,660	China	v. Opstal	1993	F	*	
Maize starch factory Whuzong	3,570	1,428	China	Dorr Oliver	1996	O		
Broiler project Henan, Jiaozhou	3,290	1,316	China	Grasso	1995	O		
Fish processing	1,102	661	Eritrea	Grasso	1996	F		

ORET/MILIEV TRANSACTIONS > 2 MILLION SDR (APPROX. NLG 5.4 MILLION)

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
MILIEV								
Energy								
Wind turbines Tamil Nadu	42,832	25,699	India	Lagerwey	1995	F	*	
Wind turbines Andhra Pradesh	42,700	25,620	India	Lagerwey	1995	O		
Wind turbines Debancheng 2	40,447	24,268	China	Nedwind	1998	O		
Solar home systems Santa Cruz	14,806	8,884	Bolivia	Shell Solar	1996	O		
Wind turbines Hui Teng Xi Le	7,731	4,639	China	Vestas	1997	O	*	
Wind turbines Ramagiri	7,500	3,000	India	Nedwind	1994	F	*	
Energy and water balance monitoring	7,430	4,457	China	Ears	1998	O		
Wind turbines Dali	7,226	4,336	China	Nedwind	1998	O		

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
Studies								
Yunnan environmental master plan	8,410	6,450	China	DHV	1994	O	*	
Groundwater study Mekong Delta	6,386	5,092	Vietnam	Haskoning	1995	O		
Sanitation								
LPG Trucks	40,000	24,000	Yemen	DAF Trucks	1996	O		
Sewerage Addis Ababa	28,600	17,160	Ethiopia	Interbeton	1997	O		
Water treatment Chengdu	18,944	7,578	China	DHV	1994	O	*	
Waste processing plant	13,069	7,841	Lebanon	DUOS Engineers	1997	O		
Banknote shredding and briquetting	10,540	6,324	China	Kusters	1997	F	*	
Banknote shredding and briquetting	8,815	3,526	India	Kusters	1994	F	*	
River basin pollution control	8,492	5,095	China	DHV	1996	O		
Water treatment Wujin	7,396	2,958	China	DHV	1996	O		
Coal fire monitoring and fighting	5,809	3,486	China	Ears	1995	O		
Dredging								
Shore protection Lac Sud	67,227	26,891	Tunisia	Van Oord	1996	O		
Gorai river dredging	60,000	30,000	Bangladesh	Boskalis	1997	O		
Rehabilitation Mangrove forest	7,208	5,833	Vietnam	Arcadis/Euroconsult	1994	O		

ORET public services

Health								
Health care Gujarat	99,600	39,826	India	PMS	1995	O	*	

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
Rehabilitation diagnostic services	59,004	35,402	Tanzania	PMS	1997	O		
Diagnostic equipment	48,373	19,349	Ghana	PMS	1994	O	*	
Cancer public awareness programme	41,975	18,889	Jordan	PMS	1993	O		
Vaccine cleanrooms	21,343	8,537	China	Karsten	1992	F	*	
Hepatitis-A project Kunming	7,900	3,160	China	Karsten	1995	O	*	
Bio-engineering Shenzen Guang Xin	5,500	2,375	China	Karsten	1998	O		
Sanitation								
Banknote shredding and briquetting	52,700	23,715	China	Kusters	1997	O		
Disaster management	43,000	19,350	Turkey	Search and Rescue	1997	O		
Drinking water	29,973	11.989	Ghana	Vermeer Ghana	1993	F	*	
Extension water treatment capacity	28,873	9,744	Ghana	Vermeer Ghana	1998	O		
Rehabilitation water treatment	16,987	5,635	Ghana	Vermeer Ghana	1998	O		
Drinking water Nanchang	16,366	6,546	China	Nijhuis	1993	F	*	
Drainage construction Yinbei	9,875	4,489	China	Arcadis/Euroconsult	1998	O		
Drinking water Zhangjiakou	9,790	3.916	China	Grontmij	1993	F	*	
Drinking Dalian	7,142	2,857	China	v.d. Cammen	1994	O		
Solid waste trucks	5,561	3,337	Yemen	Geesink	1995	O		
Energy								
Power station Mukalla	98,800	59,280	Yemen	Stork Wärtsila	1995	O		
National electrification	61,122	24,449	Ghana	QTECQ	1993	O	*	
Substation Suwiemeh	12,800	4,480	Jordan	QTECQ	1998	O		
Switchgear	10,699	3,920	India	E Holec	1992	F	*	

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
ORET infrastructure								
Road/rail transport								
Road rehabilitation	92,500	37,000	Ghana	Interbeton	1995	O	*	
266 passenger buses	82,274	49,356	Ethiopia	DAF Bus	1994	F		*
Road rehabilitation	45,000	18,000	Ghana	Interbeton	1994	F	*	
Railway signalling	27,328	10,931	Sri Lanka	NMA	1996	O		
75 Passenger buses	25,995	15,597	Palestine	Den Oudsten	1995	F	*	
Road rehabilitation	19,253	11,552	Tanzania	ADUCO	1994	O		
Highway emergency rescue	10,229	4,603	China	Rohill	1998	O		
Road rehabilitation	8,919	5,351	Tanzania	ADUCO	1996	O		
Water transport/ports/irrigation								
Seagoing hopper suction dredger	71,395	28,240	India	IHC	1995	O		
Tidal inlet Cartagena	46,833	21,075	Colombia	Boskalis	1997	O		
Dredging access to Dar es Salaam	39,658	23,795	Tanzania	HAM	1995	O		
6 Dredgers Dongtin Lake	34,781	13,913	China	IHC	1996	O	*	
Cutter dredgers Longwan	33,400	15,030	China	IHC	1998	O	*	
65 pontoon bridges	30,183	18,110	Bangladesh	Janson	1994	F		*
Hopper suction dredger	23,900	9,560	Morocco	IHC	1996	O		
3 Tugboats	19,095	7,638	Ghana	Damen Shipyards	1994	F	*	

	Transaction amount (NLG million)	Grant amount (NLG million)	Country	Company	Year of approval	Finalised (F) Ongoing (O)	Field study	Desk study
Construction works Kingston Port	17,969	7,459	Jamaica	Boskalis	1995	F		*
2 Tugboats Aden Port	16,382	9,829	Yemen	Damen Shipyards	1995	F		*
Repair wave breaker Bizerte	15,618	6,036	Tunisia	Boskalis Westminster	1994	O		
2 Multi-purpose cargo vessels	13,510	6,806	Cuba	Damen Shipyards	1996	O		
Irrigation channel Ismaila	11,310	4,343	Egypt	Bitumarin	1994	O		
Cutter suction dredgers Dongtin	10,200	4,080	China	IHC	1994	F		
2 Tugboats	9,476	5,686	Yemen	Damen Shipyards	1994	F		
Teesta Barrage	9,297	5,113	Bangladesh	K Damen	1995	O		
Tugboat	9,100	4,095	Jamaica	Damen Shipyards	1994	F		*
Cutter suction dredger Haikou	9,068	3,627	China	IHC	1994	F	*	
Cutter suction dredgers Taihu	8,815	3,526	China	IHC	1994	F		
Tugboat Kingston Port	8,643	3,889	Jamaica	Damen Shipyards	1996	F		*
Multi-purpose tugboat	8,405	4,623	Cape Verde	Delta Shipyard	1996	O		
Port transport	8,291	4,975	Benin	Damen Shipyards	1995	F		*
Buoy-mooring vessel	7,580	3,032	Tunisia	Damen Shipyards	1995	F		
Ferry	6,470	3,599	Gambia	Damen Shipyards	1995	F		
Air transport								
2 Fokker aircraft	35,000	28,350	Palestine	Fokker	1996	F	*	

Annex 4

Financial viability and conditions for achieving financial sustainability

Project	Commercial loan (NLG million)	Anticipated financial viability (appraisal)	Anticipated financial viability (evaluation)	Conditions to be met to ensure financial sustainability and their (expected) realisation
MILIEV				
Energy				
Wind Turbines Tamil Nadu	17.133	+	+	Tax reductions on first-year investments. Tax advantages not realised, but recipient is ensured of free electricity for a period of 20 years.
Wind Turbines Hui Teng Xi Le	3.092	+	partly	An electricity price of 0.58 Yuan per kWh. and a real interest rate of 4 per cent. Price not yet realised, but prices are on the increase and loan is guaranteed by government.
Wind Turbines Ramagiri	4.500	+	+	An electricity price of 2 to 3 Rupees per kWh. and a real interest rate of 4 per cent or less. Price has been realised and recipient is ensured for a 20-year period (with five-yearly adaptations).
Biomass briquetting	2.750	+	+	Based on a briquette sales price of 2,000 Rupees per tonne and a gross margin of 1,750 Rupees per tonne. Project not yet operational, but prices realistic since price of coal has recently been increased.

Project	Commercial loan (NLG million)	Anticipated financial viability (appraisal)	Anticipated financial viability (evaluation)	Conditions to be met to ensure financial sustainability and their (expected) realisation
Demonstration Low NOx burners	0	0	n.a.	Provided the installation of low NOx becomes compulsory for all power stations. As burners were donated with a 100 per cent grant, no loan needs to be repaid.
Studies				
Yunnan Environmental Master Plan	1.960	-	-	The project does not produce physical outputs that can be sold. The availability of sufficient funds to cover operating costs is ensured by the local government.
Sanitation				
Water Treatment Chengdu	11.366	-	partly	Sewerage charges of not less than 0.55 Yuan per cubic metre. These prices have not yet been realised but prices are on the increase. The municipal government absorbs cash shortfalls resulting from the application of lower tariffs.
Banknote briquetting China	4.216	-	-	Financial guarantees of PBOC to cover financial shortfalls from the operation of disintegration units. These guarantees have been met.
Banknote briquetting India	5.289	-	-	Sale of briquettes at Rupees 8,000 per tonne. Sales have not been realised, but RBI covers the shortfall.

Project	Commercial loan (NLG million)	Anticipated financial viability (appraisal)	Anticipated financial sustainability (evaluation)	Conditions to be met to ensure financial sustainability and their (expected) realisation
ORET				
Public services				
Health				
Health care Gujarat	59.774	-	-	State government funding required or imposition of fees for health care services. At present, state budget incorporates neces sary funds for repayment of the loan.
Diagnostic equipment, Ghana	29.024	-	partly	Increase of number of paying patients per day, extension of appli cations. Repayment of the loan is guaranteed by central government.
Vaccine cleanrooms, China	12.806	-	partly	Increase of price of vaccines (which would reduce the number of vaccinated people). At present, MOPH guarantees repayment of the loan and keeps vaccine prices low.
Hepatitis-A project Kunming	4.740	-	partly	Id.
Water supply				
Drinking water Accra	17.984	+	partly	Improved billing efficiency, reduction of illegal tapping and a substantial increase in water prices. Water prices are on the increase, but leakage is still substantial and billing efficiency is low (experiments ongoing). Central government is expected to guarantee the loan.

Project	Commercial loan (NLG million)	Anticipated financial viability (appraisal)	Anticipated financial sustainability (evaluation)	Conditions to be met to ensure financial sustainability and their (expected) realisation
Drinking water Nanchang	9.820	+	partly	Water price level should be at least 0.65 Yuan. This has not yet been attained, but prices are on the increase. Municipal govern ment guarantees repayment of the loan.
Drinking water Zhangjiakou	5.874	+	partly	Plant should operate at full capacity of 250,000 to 260,000 cubic metres per day. At present, only 30,000 to 50,000 cubic metres are produced at a weighted price of 0.46 Yuan. Municipal authorities guarantee repayment of the loan.
Energy				
National electrification, Ghana	36.673	-	partly	Improved billing system and a substantial increase in prices required. These conditions are not yet met. Central government has guaranteed repayment of the loan.
Switchgear, New Delhi	6.779	-	+	Continued subsidisation of investments and operating costs of electricity distribution. Guarantees for repayment have been given by central government.
Infrastructure				
Land transport				
Road rehabilitation I+II	82.500	-	-	Toll system and road fund cover maintenance costs. Government guarantees repayment of the loan.
75 Passenger buses	10.398	-	partly	Return to a normal operational environment and restoration of full fees. Chances for political solution regarding the operational environment have improved. Bus federation guarantees repay ment of the loan.

Project	Commercial loan (NLG million)	Anticipated financial viability (appraisal)	Anticipated financial sustainability (evaluation)	Conditions to be met to ensure financial sustainability and their (expected) realisation
Dangerous goods transport	2,980	+	+	Increase in transport price level by 10 per cent required over the present weighted rate of one Yuan per ton-kilometre. Increase reported to be forthcoming for dangerous goods. Recipient organisation guarantees repayment of the loan.
Water and water transport				
6 Dredgers Dongtin Lake	20.868	-	-	A 15 per cent increase of the fee of US $ 0.53 per cubic metre dredged is required or subsidisation by provincial authorities. Such a subsidy has been guaranteed.
Cutter dredgers Longwan	18.370	+	partly	A minimum subsidy of 26 to 28 Yuan per cubic metre rubble and 5 to 8 Yuan per cubic metre mud or sand is required. Such a subsidy has not been realised, but there is a potential to sell reclaimed land after three years.
Cutter suction dredger Haikou	5.441	+	+	A price of 10 Yuan per cubic metre dredged is required. Municipal authorities will cover any operational shortfalls and guarantee repayment of the loans. Possibilities to sell reclaimed land for residential area.
3 Tugboats	11.457	-	+	A price increase of 30 per cent for container throughput has been realised. Port authorities guarantee repayment of the loan.
24 harbour trailers	642	+	+	Idem.

Project	Commercial loan (NLG million)	Anticipated financial viability (appraisal)	Anticipated financial sustainability (evaluation)	Conditions to be met to ensure financial sustainability and their (expected) realisation
Air transport				
2 Fokker aircraft	6.650	+	partly	Improved network and increased number of flights and passenger miles per day required. New destinations and increased flight intensity are planned. The Palestinian Authority guarantees repayment of the loan.
Agro-industry				
Layer project Sanya	2.888	+	+	High effective demand for chicken products and high price levels.
Feedmill Sanya	2.490	+	+	Idem for feed.

Annex 5 Desk study 20 finalised projects

In order to gain further insight into the management aspects of ORET/MILIEV projects, a number of finalised projects were subjected to a desk study. This aimed at assessing:

- the average number of months taken for project appraisal;
- the average number of months taken from approval to acceptance of the grant and the (start of) deliveries;
- the number of times that prices had to be adjusted on basis of the appraisal;
- the frequency of problems encountered during implementation, and their character;
- the quality of the six-monthly reports.

The sample comprised 20 finalised projects worldwide in the period 1993-1996, excluding countries visited by the IOB team in the context of this evaluation. The projects visited in India, China, Ghana and the Palestinian territories are discussed extensively in Chapters 4, 5, 6 and 7. The main conclusions of the desk study are briefly listed below.

Appraisal

The duration of the appraisal period, i.e. from submission of the application by the supplier to the awarding of a contract, lasted on average 7.8 months. Some five projects took an exceptionally long time, more than 10 months. The average, corrected for these extremes, amounts to some 5.3 months. This compares not unfavourably with the four months formally set for the procedure. Given the fact that only four small or straightforward projects managed to stay within this formal requirement, it seems that the four months may be difficult to achieve. In all cases, the client has been cooperative in supplying information. In 50 per cent of cases the services of an external expert (i.e. not from NEI or the Ministry of Foreign Affairs) were called upon. The appraisal period for such cases averaged 8.8 months, or 5.6 months if corrected for extremes. This would indicate that the involvement of external experts has only a marginal influence on the appraisal period. Nowadays, external expertise is used for all appraisals. In 15 per cent of cases a price adjustment has had to be made as prices were found to be too high.

Acceptance and delivery

After approval of the proposal, the supplier has to confirm his offer; NIO then formally offers the grant to the recipient government. The recipient then has to secure a commercial credit for the non-grant share of the transaction cost, after which a start can be made with deliveries. The period from approval to delivery of materials in the recipient country averages some 16.5 months. Only one isolated extreme was found, i.e. more than 42 months and ongoing, hence the period required for acceptance of the grant by the recipient government, and the subsequent securing of a loan, is a very time-consuming stage.

Implementation

In 65 per cent of cases, problems were reported during implementation and led to delays. Progress reporting by the supplier was considered adequate in 55 per cent of cases, and gave an idea of the nature of problems and delays. The problems had many causes, but institutional problems on the recipient side (including political unrest), were in the majority. Discussions about technical details and delays in local transport were also frequently reported. In a few cases the recipient actually deviated from the contract, requiring intervention by the Private Sector Department.

Nature of implementation problems

Intercity Bus:	Discussion about technical details; client's wishes were difficult to reconcile with ORET conditions, delayed shipping by local company; transfer from ministry to private companies was slow and problematic.
Foam insulation:	Problems with transhipment and import of combustible materials; grant applications made to more than one source.
Port dredging:	Dredging had started before the degree of pollution of silt had been ascertained; DOB reduced the transaction value because project had unspent funds due to overestimation of silt to be dredged.
Weed harvesting:	Slow approval for dumping sites; budget problems in recipient ministry, and poor communication with the Dutch Embassy.
Tugboats:	Delays due to political unrest in recipient country.
Solar energy:	Delays in confirming contributions.
Efficient lighting:	Slow decision making in The Hague on follow-up.
Biomass briquettes:	Customs formalities; lack of cash and working capital; lack of management capacity; bankruptcy of client, and transfer of project to other client.

Port vessels:	Vessels were meant to replace obsolete ones, but on arrival were deployed as an extension of the fleet. This was accepted as a temporary arrangement.
Portable bridges:	The recipient government took a very long time to sign the grant agreement, partly due to political unrest. The supplier required much time to issue a performance guarantee, and DOB had to increase the grant element due to changed needs of the client.
Pilot boats I, II, III:	Travel restrictions due to political unrest; change of type of engine; complaints that these projects are actually one (deliveries to three different port authorities).

Table I Desk study ORET/MILIEV projects

Project	Duration of appraisal (months)	Acceptance and delivery (months)	External experts involved	Price adjustment necessary	Problems in securing credit	Problems in implementation	Quality six-monthly reports	Corrections by DOB
Intercity Bus	9.0	36.0	no	no	no	yes	adequate	no
Foam insulation	3.5	6.5	no	no	no	yes	only final document	yes
River ferries	3.0	15.0	no	no	no	no	brief but adequate	no
Tugboat I	9.0	8.0	yes	no	no	no	brief but adequate	no
Tugboat II	2.5	16.0	no	no	no	no	brief but adequate	no
Port dredging	6.5	4.0	yes	no	no	yes	only final document	yes
Weed harvesting	6.5	10.0	yes	no	yes	yes	adequate	no
Tugboats	16.0	9.0	yes	yes	no	yes	incomplete	no
Solar energy I	5.5	17.0	no	no	no	yes	only final document	no
Solar energy II	10.0	7.0	no	no	no	no	adequate	no
Efficient lighting	5.5	n.a.	no	no	no	yes	adequate	no
Biomass	18.0	>42.0	no	no	yes	yes	no reports	no
Textile equipment	2.5	18.0	yes	no	no	no	very brief	no
Solar energy	5.0	6.0	no	no	no	no	incomplete	no
Port vessels	14.0	15.0	yes	no	yes	yes	adequate	no
Portable bridges	18.5	19.0	yes	yes	no	yes	incomplete	yes
Pilot boats I	5.0	23.0	yes	yes	no	yes	adequate	no
Pilot boats II	5.0	23.0	yes	no	no	yes	adequate	no
Pilot boats III	5.0	23.0	yes	yes	no	yes	adequate	no
Waste policy	6.5	n.a.	no	no	no	no	no reports	no
Total	156.5	297.5						
Average:	7.8	16.5						

Annex 6 Results of the questionnaire

In the context of the evaluation of the ORET/MILIEV programme, a questionnaire was sent to suppliers with the following objectives:

- to gain an impression of the attitude of suppliers with regard to ORET/MILIEV procedures, conditions and development objectives;
- to learn about their motives for applying for ORET/MILIEV funding;
- to obtain an indication of the chances that ORET/MILIEV transactions will result in further trade opportunities or investment.

Questionnaires were sent to 58 suppliers to finalised and ongoing ORET/MILIEV projects. Some 43 valid answers were received, representing a score of 74 per cent. The questions allowed for short answers in order to avoid a time-consuming exercise for the addressees, but many suppliers took the trouble to elaborate their answers. The percentage scores should be regarded as indications rather than absolute since some replies left room for interpretation. The gist of the answers was clear, however, and where elaborations provided interesting observations, they were recorded for use in this evaluation.

I ORET/MILIEV procedures, conditions and development objectives

1.1 How did you get to know about the ORET/MILIEV programme?	
Foreign Affairs:	44%
Other:	42%
Economic Affairs:	9%
From client:	5%

It is interesting to note that the Ministry of Foreign Affairs constitutes an important source of information for exporters. This may be closely linked to the second category: 'other', which applies to suppliers who indicated that it is their business to know about export promotion programmes. They know where to look and many have benefited from

the programme over a long period of time; hence, they do not remember who was the first to learn about the possibilities.

1.2 Were procedures clear?	
yes:	56%
reasonable:	23%
no:	21%

The majority of suppliers consider the procedures and forms for ORET/MILIEV funding clear or reasonably clear. This could be expected as they would study such commercially important information closely. Suppliers who complained about lack of clarity are mostly newcomers who have trouble in familiarising themselves with the particular conditions and requirements of the programme.

Knowledge of procedures does not mean that there were no complaints. Many remarks concerned the fact that procedures were time-consuming. In particular, consultations with sectoral experts during appraisal reportedly made the process lengthy and ambiguous. Decisions are not transparent and there are no clear procedures for defence or complaint: NEI, Embassies, Economic Affairs and Foreign Affairs have been approached by suppliers who wished to complain or to express their concern.

1.3 Is the 60 per cent condition for Dutch-sourced materials and services realistic?	
yes:	65%
no:	19%
not always:	16%

The majority of suppliers finds the condition that 60 per cent of supplies have to be sourced in the Netherlands to be reasonable. This fairly high percentage may be no coincidence, as the conditions of the ORET/MILIEV programme particularly attract suppliers who are themselves producers, and/or are able to obtain parts elsewhere in the Netherlands. The 'No's' were predominantly voiced by suppliers to MILIEV energy projects or suppliers who assemble their export products in the Netherlands.

Some remarks have nevertheless been made with regard to the 60 per cent condition that are of importance to this evaluation.

- The actual sourcing may well be below 60 per cent as some deliverables are considered Dutch when 51 per cent or more of their value is related to Dutch goods or services;
- Some claim that the Dutch content is difficult or wellnigh impossible to calculate;
- To attain the 60 per cent condition, products or parts thereof are often sourced in the Netherlands while cheaper alternatives are on hand in other European countries or in the recipient country. Or, perhaps more Dutch labour is put in when local labour would do. In such cases, the condition leads to higher prices than are strictly necessary. If there are production possibilities in the recipient country, the condition has not only an upward effect on prices but also a downward effect on development relevance. MILIEV energy projects in particular face this problem;
- Several suppliers (and their clients) consider it reasonable to link the concessionality to the level of sourcing: a grant of 35 per cent would require the supplier to source 35 per cent in the Netherlands.

1.4 Is the trade or ORET/MILIEV's development objective more important to the supplier?	
trade	12%
development	14%
both	74%

The fact that the majority of suppliers stated that both trade promotion and development were important to them, could be regarded as a socially desirable reply. The narrative of many replies was interesting, however, as it indicated that although trade interests obviously came first, the conditioning of the ORET/MILIEV programme would ensure development relevance. In other words: they subscribe to the development objectives of ORET/MILIEV, but rely on its conditions for their realisation.

These remarks seem to indicate that suppliers not only accept the developmental objectives of the ORET/MILIEV programme, but also use them as guidance in their market approach.

1.5 Is the recipient structure in the developing country conducive to trade and investment?	
Recipient structure conducive	
Yes	75%
difficult	16%
no	9%

The majority regarded the recipient structure in the recipient country as conducive to their trade activities. This may not be surprising since unconducive conditions do not attract trade. Nevertheless, some 25 per cent considered the recipient structure either difficult or non-conducive; most of these were concentrated in the MILIEV energy cluster. The question regarding recipient structures was asked to find out whether, in the opinion of suppliers, development programmes had contributed to their trade opportunities.

Did you benefit from any development programme?	
Yes	35%
No	56%
Don't know	9%

More than half the suppliers replied that they had not benefited from any development project or programme. Those who answered in the affirmative usually had the ORET/MILIEV programme in mind; hence, a link between aid and trade programmes seems virtually absent. It was subsequently asked whether a closer linkage would be regarded as desirable by the suppliers.

Better coordination between aid and trade instruments required?	
Yes	91%
No	9%

A large majority, 91 per cent, indicated that they would welcome close coordination of aid and trade instruments. It was clear that some were thinking of ORET/MILIEV, but most actually considered such a linking to be conducive to trade opportunities. The nine per cent against such a linking consider pure trade promotion without conditionalities to be better for their business.

II Motives for ORET/MILIEV application

2.1 Why ask for ORET/MILIEV funding; did the client specifically request them to apply for the grant, and would the deal have gone through without it?

Most respondents indicated that ORET/MILIEV funding was needed to realise a project that otherwise would not have gone through (95 per cent); the rest thought the deal might have gone through anyway, but with other suppliers. In 54 per cent of the cases, the client explicitly requested concessional funding. Some suppliers added that they had sought ways to generate work or exports (7 per cent).

2.2 Direct negotiation or International or Limited Competitive Bidding?

Direct	74%
ICB/LCB	21%
other	5%

Some three-quarters of suppliers have realised contracts with ORET/MILIEV support through direct negotiation. Many indicated that competitive bidding procedures give too little opportunity to recover the costs of preparing the tender proposal. This reply is consistent with the previous question in which only five per cent indicated that the deal would have gone through if the ORET/MILIEV grant had been refused; direct negotiations often result in tailor-made solutions based on intensive interaction between client and supplier. Almost half the respondents who answered that they had negotiated directly, indicated that they would also have participated in an open tender for the same project.

2.3 Preference for Dutch commodities, any import restrictions on those goods?

Preference	
Yes	44%
No	56%

In 44 per cent of cases, there has been a clear preference for Dutch-sourced products or services. In many cases, this relates to a certain uniqueness of the product or service, combined with the possibility of concessional funding. In other cases no such preference was given; hence, the possibility of obtaining ORETgrants was the decisive factor to buy the products from the Netherlands.

Any import duty?	
Yes	49%
No/partially	51%

In many countries, ORET/MILIEV-supported imports are regarded as aid and thus are exempted from import taxes. This often forms an important extra incentive for the client to obtain concessional funding as import duties usually have to be paid in full by the client. Subsequent orders for spare parts do not have such preferential treatment and are subject to bureaucracy, duties and currency restrictions. The inclusion of sometimes substantial numbers of spare parts can thus be found in ORET-supported export contracts.

2.4 Did you already have steady relations with the country; do you have an office or an agent?

Steady relations		Office/agent/representative	
Yes	67%	Yes	86%
No	33%	No	14%

The majority of suppliers already had some form of relationship with the recipient country before they applied for ORET/MILIEV support, often due to earlier ORET/MILIEV transactions. Most, i.e. 86 per cent, have since established a more permanent representation in the form of a local agent, representative or office. This presence is expected to be conducive to the exploration of further trade opportunities.

III Follow-up orders

3.1 Follow-up orders/greater chance for sustained relations?	
Yes	51%
Chance	35%
No	14%

3.2 Contemplate investment or joint venture?	
Already	42%
Consider	26%
No	32%

Half the respondents reported having had a direct spin-off from the ORET/MILIEV contract in the form of follow-up orders, whilst 35 per cent indicated that they stood a fair chance to negotiate a new contract. Many added that further ORET/MILIEV support would be necessary in their line of business. This optimism about future deals is reflected in the rating for joint ventures and investment; some 42 per cent are already engaged in some form of cooperation (mostly joint ventures), whilst 26 per cent consider closer forms of cooperation. Suppliers who do not contemplate any form of durable local investment are mainly advisers and trading companies.

3.3 Local competition, cooperation, transfer of technology

Competition		Transfer of technology	
Yes	49%	Yes	51%
No	51%	No	49%

Half the suppliers indicated that they faced competition in principle from local firms which were usually not able to deliver international quality standards or to handle large projects with clear performance guarantees. Also, local markets are often too small to allow any scale economies for local companies. In the longer run, however, such companies are expected to absorb modern management principles and technology, as half the suppliers anticipated that their technology would eventually be transferred to local producers.

Annex 7

General lay-out of NEI appraisal reports

Description of the transaction
- The supplier
- The implementing agency
- Goods and services to be supplied
  - Description
  - Technical quality assessment
- Sources and origin of the product
- Organisation of the transaction

Description of the project
- Background
  - Project definition, objectives and impact
  - Description of the economic system
- Project implementation
  - Proposed project activities
  - Means and budget
  - Financing of the project
  - Project organisation and management

Key assumptions of the project
- Output and input volumes
- Prices of outputs and inputs
- Costs and revenues

Commercial viability
- Cash flow calculations
- Sensitivity analysis
  - Risks

Development aid aspects

- Project selection (consistency with investment priorities of recipient)
- Financial sustainability
- Economic viability
- Technical aspects
- Institutional assessment
- Aspects of poverty, women and development
- Environmental assessment

Some deviation between reports may occur.

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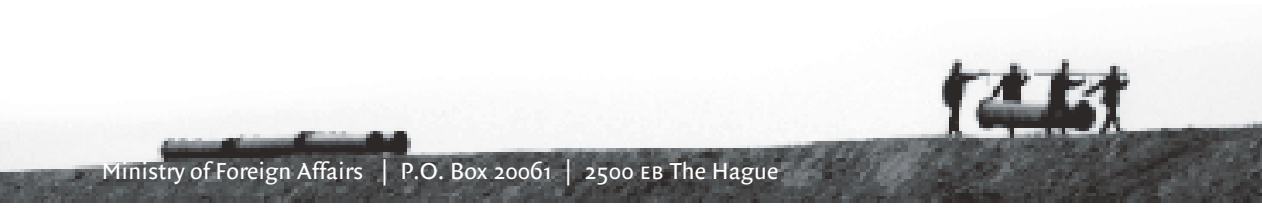

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