

Memorandum

**Information and Communications Technology (ICT)
and Development**

The Netherlands

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By the Minister for Development Co-operation

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1. Introduction and summary¹

Modern information and communications technology (ICT) is having far-reaching consequences for the economy and society. As a driving force in the process of globalisation, it will inevitably also affect developing countries. However, the digital gap between developed and developing countries is considerable, and is still widening. Experience shows that while ICT is by no means a panacea, it has the potential to make a powerful indirect (and sometimes even direct) contribution to poverty reduction. 'Leap-frogging' has also proved possible. In some developing countries, for example, the rapid evolution of mobile telephony has overtaken the development of the fixed network. Even so, developing countries face the tough challenge of having to assimilate technological innovations of unprecedented complexity and speed. Countries in Sub-Saharan Africa will find this particularly difficult since they lack the necessary manpower and financial capacity. Dynamic ICT and facilities companies are essential, notably to attract investment and to promote the transfer of technology that matches actual needs.

The Directorate General for International Co-operation (DGIS) has actively supported 'ICT and Development' for several years. In 1996, the Minister for Development Co-operation launched the International Institute for Communication and Development (IICD) in The Hague. During its initial development period (1996–2001) the institute was almost entirely funded by the Netherlands, receiving over EUR 11.5 million in funding. In 2002, the Dutch government granted it an extra EUR 21.5 million for a further five-year period. The Netherlands is still its main sponsor, although the Ministry of Foreign Affairs is now encouraging it to actively seek additional finance. The institute also receives funding from the UK and Swiss governments, it now operates in eight developing countries, and centres on a demand-led strategy based on the principle of ownership. During round table conferences in these developing countries, groups of stakeholders work together to formulate a joint policy outlook and a programme of activities.

Within the co-financing programme, the Humanist Institute for Co-operation with Developing Countries (Hivos) is the organisation that is most active in 'ICT and

¹ This memorandum follows on from my letter to the House of Representatives of 17 October 2000 (27400 V, no. 41) in which I stressed the importance of ICT for development and announced my intention to present proposals for supporting the application of ICT in development processes. It was drafted following consultations with representatives from the South, donor groups and Dutch organisations in the first half of 2001. See www.bellanet.org/ict-strategy for the results.

Development'. The Netherlands also supports various NGOs that are active in this field, such as PANOS and OneWorld, as well as multilateral initiatives such as InfoDev and the Development Gateway Foundation. Obviously, ICT also plays an instrumental role in a number of bilaterally financed sector programmes. The main requirement is that initiatives must show evidence of genuine added value. This means that multilateral initiatives will only be supported if they are more effective than other channels. Given the need for a demand-led approach based on ownership, funding will continue to be given to the IICD strategy of round table conferences, which encourages developing countries to formulate their own ICT policies. The Dutch government has expressly decided not to build up extensive expertise within the Ministry of Foreign Affairs itself, but to promote its development in developing countries themselves.

Section 2 discusses the importance of ICT for development and poverty reduction and the conditions required for the effective deployment of ICT in developing countries. Dutch-funded activities to promote 'ICT and development' are described in section 3, and examples are given in boxes throughout the text.

2. The importance of ICT for poverty reduction

Modern information and communications technology is rapidly changing the economy and society. As one of the driving forces behind the current process of globalisation, it will inevitably also affect developing countries. The main challenge facing these countries is to seize the opportunities ICT presents, while avoiding negative consequences. The interests at stake, both for developing countries and for the key development goal of poverty reduction, are immense. Developing countries and the international community have set themselves the ambitious target – laid down in the UN's Millennium Goals – of halving the total number of people living in absolute poverty by 2015. Initial experiences of using ICT to assist development and poverty reduction show that it can help to achieve this goal.

ICT in the health care sector in Ghana

The system of updating patient records in the health care sector in Ghana, which currently relies on manual input, is standing in the way of a more efficient, higher quality of care. A filing system for patient records has therefore been developed to improve the reliability, speed and continuity of care. This system can be used to analyse information and to support various functions, such as boosting the speed and accuracy of diagnoses and enabling the ongoing monitoring of patient details. Managers can also use the patient records to plan services and resources, fix budgets and allocate space. Finally, the information can be used in reporting,

prevention and supplying public information on health care and research. The aim of the pilot project, which is initially being carried out in the regional hospitals, is to enable those concerned to 'learn by doing'. It can then be extended to larger regional hospitals, district hospitals and primary health care institutions at various levels.

While ICT is not a panacea, it has the potential to make a powerful indirect - and sometimes even direct - contribution to poverty reduction. The use of ICT to improve communication between urban hospitals and rural first aid posts can significantly improve the quality of health care in peripheral regions. The same applies to a wide range of other government services, such as education and information for farmers. The poor can gain access to valuable information, such as market prices and weather forecasts, through computers in community centres. Sometimes this information is disseminated more widely through a simple computer printout pinned to the wall, a loudspeaker or radio.

Many developing countries recognise the potential of this new technology. One or two have already formulated a policy for the application of ICT; Zambia, for example, has an ICT strategy for the education sector. NGOs are also launching a rapidly growing number of small-scale ICT initiatives.

Management information in the education sector in Zambia

A few years ago, the Ministry of Education in Zambia launched an initiative with IICD (the International Institute for Communication and Development) to formulate a broad ICT policy which would include the development of management capacity within the ministry itself. The project began by looking at where and how ICT could be used to boost productivity. The aim was to gather, process and exchange information on pupil numbers, budgets and their allocation. ICT is also used in the development of teaching programmes and for public information. The ministry has now found the necessary funds and has started working out the plan in more detail and training staff.

ICT makes communication faster and more effective, not just between governments and the public, but also between private individuals. People can make their voices heard more easily and can take their concerns to local and central government. ICT also provides effective opportunities for cross-border communication. More and more international networks are springing up, and not just for the provision of information (compare e.g. Panos, OneWorld and the Development Gateway). There are, for example, a growing number of e-commerce networks between expatriates and their fellow countrymen at home, and the Internet is also of use to refugees.

ICT is also crucial for business and industry in developing countries. It is no longer an unfamiliar commercial sector, although it is still concentrated in urban areas. New

technology is increasingly being transferred from the ICT sector to other production sectors. This type of knowledge transfer to local enterprise can also be carried out in co-operation with companies abroad.² This is important, since ICT gives companies the edge on both local and global markets. ICT offers local companies new ways to catch up in areas such as planning, marketing, knowledge of financing opportunities and methods to increase productivity, so that they can boost their national and international competitiveness and capacity for growth.

The market for yams in Ghana

One of the activities in which IICD has been involved is the application of ICT to the yam market in Ghana. ICT is used to help buyers and sellers exchange information about prices and production output. This has significantly improved the competitiveness and market position of the farmers. An e-commerce project has been launched to give farmers better access to information on matters such as prices, harvests, agricultural inputs and the physical environment via websites and e-mail. In one instance, a group of merchants in southern Ghana found information on the web which showed that they could buy yams more cheaply in central Ghana than they could in their own region. Armed with this information, they organised a meeting with smallholders in Central Ghana and asked them if they could supply the necessary quantities of yams. The answer was yes. As a result, everyone benefited - the growers (approximately 1,400 smallholders) because they not only increased their sales but were also able to sell their products at a higher price, and the merchants because they were able to buy the quantities they needed. Without ICT to improve the way the market operated, this would never have happened. In future, a similar mechanism will be developed to strengthen the position of smallholders by boosting efficiency and reducing waste caused by fraud and unnecessary transport.

ICT presents developing countries with opportunities, many of which are still unexplored. However, the digital divide between developed and developing countries is continuing to widen. Technological advances in the world's wealthier countries are progressing at great speed, whereas too little is being invested in specific applications for developing countries, especially for the poorer population groups. The risk of these countries falling even further behind is considerable, since few people have access to modern communication methods or to relevant information that matches their needs. Moreover, in developing countries, as elsewhere, it is the wealthy elite and the urban economic centres that are the first to benefit from the new opportunities and to gain the most from them. This can lead to even greater social and economic disparities. Gender aspects also play an important role.

² See also *Ondernemen tegen Armoede: Notitie over Economie en Ontwikkeling* (In Business against Poverty: Dutch policy memorandum on Economy and Development). The Hague, Ministry of Foreign Affairs and Ministry of Economic Affairs, 2002.

ICT is a driving force behind the process of globalisation, which is bringing about radical changes in both the developed and the developing world. As a result, markets and production processes are fast internationalising. For an adequate response, knowledge and understanding of ICT are needed and a good local enabling environment must be in place.

Nor, of course, is the globalisation process confined to the economy. The media, culture and migration are other areas in which ICT plays an important - though not always equally visible - role. It is, for example, changing the composition of news in the print media and on television, and it is opening up new opportunities for local radio stations. The distinction between old and new media is disappearing.

Bolivian Indians and their struggle to reclaim their community lands

Since the early 1990s, the Bolivian Indians have been trying to reclaim part of their indigenous community lands. So far, however, only 2.3 million of the disputed 29 million hectares have been returned to them. During the negotiations between the Bolivian government and Indian delegates from the Confederación de Pueblos Indígenas de Bolivia (CIDOB), it was recognised that better communication was needed to give the legalisation process a chance of success. CIDOB therefore launched the project 'Indian Community Land: conflict and negotiation', with support from Hivos and IICD. The aim of the project is to keep the Indians up to date on the progress of the legalisation process and to lobby on their behalf at national and international level for recognition of their rights. CIDOB uses both traditional and electronic methods of communication. According to project manager Eliana Rioja, lobby groups representing the Indians, civil and human rights organisations and the national and international media play an important role, since they can exert the necessary social and political pressure. In September 2001, the Internet was used to spread news of a land dispute in Santa Cruz which had led to the abduction of the leaders of the Indian Council. CIDOB regularly puts news bulletins on its website as a way of monitoring and streamlining the legalisation process. The website also contains a large amount of data, including maps showing the legal status of various tracts of land. The website is maintained by the Indians themselves, for which they are specially trained.

The inadequate telecommunications infrastructure in many developing countries is a major barrier to the effective application of ICT, especially in the more peripheral regions. On the other hand, it has the potential to encourage 'leap frogging'. In other words, where established systems and their associated interests are weak, innovations can often be pushed through much more quickly. For instance, the use of mobile telephony has already outpaced the fixed network in a growing number of developing countries. Nonetheless, substantial investments are still required. Satellites are often needed for adequate telephone and Internet connections, especially in the more outlying regions. A reliable electricity supply is also crucial. Moreover, a positive investment climate will generally only be achieved if the telecom sector is privatised and laws and regulations are amended. An

'open' economy and a good business climate are essential, and, under the right conditions, they can lead to the introduction of new technology and the development of useful applications, since the creation of a local infrastructure is the responsibility of the private sector. Governments, including those in developing countries, can do no more than provide incentives and ensure that the right conditions are in place. Obviously, special attention will need to be given to the poorer regions and to groups that are less commercially attractive. Experience in other sectors shows that technology has to be transferred with the utmost care, and that it must be tailored to existing capacity in developing countries, which is usually limited.

However, the development of expertise and technological innovation in developing countries cannot be left to the market alone. It is up to the government and NGOs to ensure that the poor can also benefit from ICT wherever possible. This can be done by formulating policies with stakeholders that specifically focus on the interests of the poor, by encouraging network operators to channel some of their investments towards less commercially attractive regions, by encouraging and co-financing ICT applications that will directly benefit the poor, such as information points in local community centres, and by investing in ICT applications in the public sector, for example in education and health care.

Education is of course vital if the opportunities offered by ICT are to be effectively exploited. Hardware and software alone are not enough. The Internet can only be of any value if users have access to information in their own language that relates to their specific situation. This is seldom the case. Users also need to be able to read, interpret and apply information effectively. The ability to learn is a key prerequisite for making good use of the information that is supplied via the Internet. The idea that illiterate users can also use the Internet as long as information is supplied via pictures has frequently proved unworkable. Basic education for broad layers of the population is therefore a must. ICT specialists and service engineers are also needed to help users with ICT installation, and for software development, hardware and network maintenance and so on.

As elsewhere in Dutch development policy, the underlying principles governing the concept of 'ICT and Development' are the need for ownership and a demand-led approach. Moreover, in a sector like ICT, in which people can often be confronted by a confusing array of new applications and trends, it is particularly important for a realistic attitude to prevail and for the limited resources available to be used to generate the

highest added value. Any measures taken must boost the efficiency and effectiveness of development efforts and lead to a tangible reduction in poverty. It is therefore vital for developing countries to create their own local capacity to adequately appraise ICT applications and to match these new technologies to specific local circumstances. The round table conferences that IICD is organising in developing countries will encourage and initiate such developments.

3. ICT in Dutch development co-operation

Most of the Netherlands' 'ICT and Development' activities in developing countries are financed from the Communications Programme, the purpose of which is to assist communication processes in developing countries that promote social involvement. It does so by (a) encouraging a free press and freedom of expression and (b) encouraging the use of modern information and communications technology. A total of EUR 8.5 million has been set aside for the Communications Programme in 2002, over half of which will be spent on 'ICT and Development'. Incidentally, Dutch support for ICT in developing countries is not restricted to that programme, but is also provided through other channels such as the World Bank partnership programme. ICT also plays an instrumental role in various sector programmes, which are financed under the Netherlands' bilateral development co-operation policy.

The Netherlands also supports ICT activities that form part of other, larger programmes, such as the Co-financing Programme for Co-operation in Higher Education (MHO). The level of funding allocated to such ICT activities is not registered separately.

ICT in higher education: the University of Dar es Salaam

Since 1995, the Co-financing Programme for Co-operation in Higher Education (MHO) and Delft University of Technology have co-funded the use of ICT in administration and in ICT courses at the University of Dar es Salaam. The university now has a computer network providing Internet access, which is available to students and staff alike. Most of the students have their own e-mail account. Some 1,600 computers are now connected to the network, and this has led to a sharp rise in the level of international data traffic. In 1995, international messaging was still being carried out entirely by phone and fax. At the time, there were fewer than 2,000 messages a year, whereas now there are over 2,000 messages a day (and sometimes far in excess of that number). The University of Dar es Salaam also uses computerised administration and management applications. It has a well-equipped computer centre that is pre-eminent in its field, with 77 staff, including 43 service engineers. The university has created the Tanzania start page (www.start.ac.tz) and the Tanzania Educational Network (www.usdm.tz).

During the 1990s, the Netherlands was one of the first bilateral donors to include 'ICT and Development' on its agenda. The huge wave of international interest in 'ICT and Development' did not emerge until 2000, when it most notably resulted in the establishment of the Digital Opportunity Task Force³ (DOT Force) by the G8, and a similar Task Force by the United Nations. A growing number of bilateral donors are gradually beginning to launch 'ICT and Development' initiatives. In April 2002, for example, Italy organised an international conference on 'E-Government for Development' as part of the DOT Force programme.

In 1996, the International Institute for Communication and Development (IICD) was established in The Hague by the Dutch Minister for Development Co-operation.⁴ During its initial development phase (1996–2001) the institute was funded almost entirely by the Netherlands, which provided over EUR 11.5 million. At this time, IICD developed its specific working method, which centres on a demand-led approach based on local ownership. During the round table conferences organised by IICD, various stakeholders in the countries concerned – the government, enterprises and NGOs – formulate a shared policy outlook and programme of activities. Financial support for these activities is generally sought in the countries themselves and from other donor funds, to promote ownership and to avoid over-dependence on a single donor. IICD does however occasionally provide targeted grants to help launch specific activities. During its initial development phase, IICD joined with local stakeholders to develop programmes in eight countries: Bolivia, Burkina Faso, Ghana, Jamaica, Mali, Uganda, Tanzania and Zambia. The key sector priorities in these countries, as defined by the local partners at the round table conferences, are health care, education, the economy, good governance and the environment. IICD has also developed and carried out training programmes in these countries, again in partnership with local organisations. Obviously, the institute also serves as an expertise centre for 'ICT and Development'. And finally, it acts as a forum enabling the various country programmes to exchange experience, knowledge and lessons learnt.

3 See e.g. 'Digital Opportunities for All: Report of the Digital Opportunity Task Force, G8 Meeting of Foreign Ministers and the G7/G8 Summit, Genoa, July 20-22, 2001' and the website www.dotforce.org.

4 For more information, see the International Institute for Communication and Development website at www.iicd.org.

In 2002, IICD was awarded a EUR 21.5 million grant for a further five-year period. Although the Netherlands is still its main financier, the institute has since built up an international reputation on the strength of its systematic, demand-driven approach. IICD is now being encouraged by the Ministry of Foreign Affairs to actively seek additional finance from other donors. It currently receives funding from the UK and Swiss governments as part of a partnership programme entitled 'Bridging Digital Opportunities',⁵ in which other NGOs (e.g. PANOS and OneWorld, both of which are funded by the Directorate General for International Co-operation (DGIS)) are also involved.

Portmore, Jamaica: an IICD round table conference

IICD is encouraging developing countries to apply ICT. It does so by organising round table conferences at which ICT strategies and projects are formulated by stakeholders representing a variety of groups and organisations from the developing countries concerned.

Following a request from the Portmore Municipal Development Committee, IICD and the National Commission on Science and Technology in Jamaica organised a round table conference on 'ICT and Good Governance' in September 2001. It was attended by 40 delegates from a wide range of interest groups. They included representatives from public and private sector organisations, political parties and local and national authorities. The aim was to generate input for ICT policy and to formulate ideas for specific projects. The conference stressed the need for central government to be willing to devolve authority to local and regional authorities and to set down these decentralised powers in law. It also emphasised the importance of involvement by the private sector, including in the form of local investments. The third prerequisite was to encourage citizens to take up their individual responsibilities.

The conference spent much of its time discussing e-democracy, that is, the use of ICT to improve the functioning of government. More effective distribution of relevant information will create a better-informed public. ICT can also be used to encourage people to become more involved in public decision-making. This was the subject of a pilot project in which a range of different applications was assessed.

Community organisations can play an important role in the dissemination of information on public issues. They can, for example, use the Internet together with the existing media, radio and television. An awareness-raising programme was launched centring on community involvement, civic responsibilities, norms and values, responsibilities within the family and sex education.

Educating marginalised groups is another way of encouraging more people to become politically and socially aware. ICT can also be used more generally in education and training programmes. The conference also identified a need for ICT applications in the public service sector, in the sphere of planning (primarily land use), public services, economic growth (promoting investments in job creation) and informing citizens of their rights.

Within the co-financing programme, the Humanist Institute for Co-operation with Developing Countries (Hivos) is the organisation that is most active in 'ICT and

5 From the UK Department for International Development (DfID) and the Swiss Agency for Development Cooperation (SDC).

Development'. Five per cent of Hivos' budget is allocated to a special action programme on ICT. This came to EUR 3 million in 2001.

The Hivos action programme on ICT

The Hivos policy and action programme 'Access for all: equal opportunities in cyberspace' actively assists southern NGOs and their target groups to exploit the opportunities offered by information and communications technologies. It is also dedicated to closing the widening digital gap between developed and developing countries. The activities co-funded by Hivos include promoting access to the Internet, boosting capacity, encouraging the placement of information relevant to the South on the world wide web, promoting digital networking and lobbying and e-commerce. Hivos exports non-western expertise to its partners in developing countries, to tie in with existing local initiatives. Key strategic partners for Hivos in the sphere of 'ICT and Development' are OneWorld International and IICD.

One partner co-funded by Hivos is Red de Desarrollo Sostenible (RDS) in Honduras, which was established in 1994 by the UN in a number of Latin American countries, including Bolivia and Honduras. It began as an e-mail provider for civil-society organisations but eventually developed into a general provider of information on the environment. RDS Honduras soon became an independent NGO and now has more than 500 members, among them national and international NGOs, local voluntary organisations, micro-enterprises, university-based organisations and government agencies. When Honduras was devastated by Hurricane Mitch, RDS soon restored communication throughout the country via the Internet. Victims were able to place appeals for missing family members on the RDS website, and many people managed to locate one another. RDS also facilitated co-ordination between aid organisations.

Another Hivos partner is the Asociación de Organizaciones de Productores Ecológicos de Bolivia (AOPEB), which helps organic growers with production and marketing. AOPEB has set up a virtual marketplace and a regularly updated website containing information on prices, supply and demand, market fluctuations, product quality and food assurance marks, distribution channels, and so on. The project is designed to boost growers' incomes by reducing their dependence on middlemen, increasing their knowledge of the market, matching supply and demand and improving production methods.

In addition to IICD and the organisations PANOS and OneWorld, the DGIS Communication Programme also supports one or two NGOs, notably Sarai / De Waag and Fair Trade Assistance / Peoplink.

Co-operation between Sarai (India) and De Waag (the Netherlands)

The partnership between Sarai and De Waag, the Old and New Media Organisation, is unusual. Given the highly advanced position of the ICT sector in India, there is little need for technical assistance from the Netherlands. However, India's pre-eminence in ICT is concentrated chiefly in the private sector. Most of its knowledge is embodied in companies rather than in the public sector. Sarai was therefore established to encourage the use of the new media in the public sector, starting with a public debate on social issues. However, it has not yet acquired sufficient expertise. By contrast, De Waag, which is based in Amsterdam, has built up considerable experience in applying ICT to the public sector.

One example of a recent form of co-operation is support for 'Cybermohallah', a media laboratory located in the slums of New Delhi which is developing open-source software with the help of local residents. Not only is the software free of charge and available to all, but those involved have acquired training in the skills they need to substantially improve their prospects.

The Netherlands also supports multilateral initiatives, such as InfoDev, a World Bank programme it has co-funded for many years. InfoDev, which helps developing and transitional countries to benefit from the opportunities provided by ICT, assisted in the removal of potential 'millennium bug' problems in these countries with a substantial contribution from the Netherlands.

In 2001, a EUR 5.5 million grant from the Netherlands for a three-year period enabled Mali to become one of the founding members of the Development Gateway Foundation (DGF)⁶, and the country's then president, Alpha Oumar Konaré, to join its executive committee. The purpose of this measure was to give developing countries a bigger voice on the DGF executive committee. The DGF, which was established at the instigation of the World Bank, is now in the process of becoming an independent agency. Its key mandate is to launch and maintain a website containing a wide range of information and knowledge on development and poverty reduction.⁷ DGF has also started putting together a network of research and training centres, beginning with 'contributions in kind' from India and South Korea. In the future, it will be providing a programme of subsidies and investments to promote innovative ICT applications at local, national and international level. Finally, DGF is actively helping developing countries to set up their own 'country gateways' - websites containing information and knowledge relevant to development in that particular country.

⁶ The overall budget of the Development Gateway Foundation for the current three-year period is USD 52 million. The Netherlands' contribution comes to 10 per cent of this total.

⁷ See www.developmentgateway.org.

InfoDev

The key mandate of the World Bank's InfoDev initiative is to encourage the use of ICT applications with a view to fostering social and economic development. InfoDev provides funding for demand-led projects in which ICT is used to assist poverty reduction. Governments, private companies, non-profit organisations and international (development) organisations are all eligible. New activities include the formulation of detailed plans for 'country gateways' (in co-operation with the Development Gateway Foundation) and the ICT infrastructure and e-readiness initiative. 'Country gateways' are portals closely linked to the 'Development Gateway' which allow developing countries to make information accessible and to exchange it. The ICT infrastructure and e-readiness initiative helps developing countries to analyse and evaluate their ICT infrastructure and to improve it where necessary. It focuses on policy-related, legal and regulatory matters and human capital requirements.

The key principle guiding the formulation of 'ICT and Development' policy and the programme of activities has always been to prevent the duplication of effort. This means supporting multilateral initiatives wherever possible, provided of course they demonstrate an added value over other channels. Due to the importance of promoting a demand-led approach based on ownership, the Dutch government has also decided to continue funding the International Institute for Communication and Development. The IICD strategy of organising round table conferences and developing country programmes by and in close co-operation with all the relevant stakeholders in the developing countries concerned is after all an approach that should be more widely emulated and therefore deserves to be supported for its exemplary value.

DGIS has expressly decided not to build up extensive expertise on 'ICT and Development' within the Ministry of Foreign Affairs. Of course, the ministry does have sufficient in-house expertise to enable it to participate in international debate and policymaking wherever useful and necessary, and to evaluate grant applications and monitor the implementation of programmes. However, development and poverty reduction will ultimately best be served by the creation of practical expertise and capacity in the developing countries themselves.