



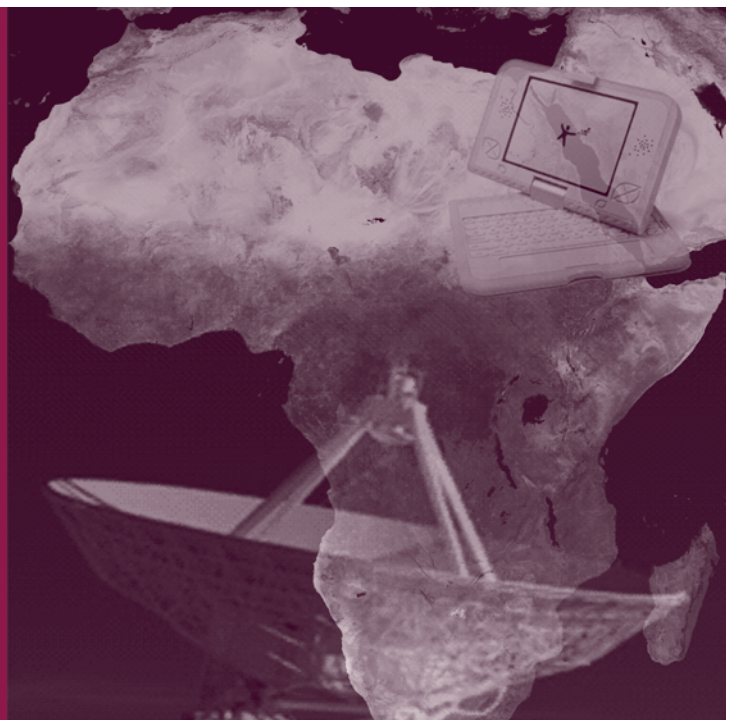
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Internet communication in and with developing countries

Summary

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SUMMARY

Since the 1990s Africa has moved back up the political agenda – above all as a result of the United Nations Millennium Declaration and African reform and unification aspirations. On the other hand the use of information and communications technologies to promote social development continues to remain marginalised in the discussion on international development policy: It is true that through the two-phase United Nations World Summit on the Information Society (2003/2005) a certain amount of attention was drawn to this topic also in relation to Africa. Outside the continent however, it is as yet primarily a development policy community supported by non-state actors, a small number of »Northern« countries along with several international organisations, who have embraced the subject.

The topicality of the issue is however demonstrated by looking at the current programmes and strategies pursued by African states and regional organisations, at the practice and statements made by the institutions of African civil society, as well as at the local, in part extremely rapid development of the Internet and mobile telephony. German development policy and cooperation will have to continue to occupy itself with this issue and to clarify its own strategy simply because of the interest in Africa itself in the implementation of information and communications technologies (ICT) for the promotion of development.

The TAB report focuses its investigation against this background on the reality and potential of Internet use in sub-Saharan Africa. Three fields of application, which concur to a large extent with the areas designated by the federal government as of prime importance, are central to the analysis:

- > Democratic development, government action and civil society;
- > Economic development and trade;
- > Education, research and technological development.

The focus of the investigation commissioned by the Committee on Education, Research and Technology Assessment in co-ordination with the Committee for Economic Co-operation and Development (AWZ) is on Internet use. The Internet is not viewed as detached from other conventional (e.g. radio and television) and modern (e.g. mobile telephony) information and communications technologies. The analysis is thus also a contribution to the overall discussion on the use of ICT for Development (ICT4D). The strategic clarification of the signifi-



cance of »ICT4D« has been found to be inadequate for Germany's development co-operation.

Following an assessment of the current and future importance of the Internet and other ICT for development, as well as the explanation of the essential results of the survey on the starting position in sub-Saharan Africa and on the three fields of application forming the focus of the analysis, both specific courses of action for individual areas of practice as well as general guidelines for the clarification of the strategic importance of ICT4D in German development co-operation will therefore be put forward for discussion in conclusion.

THE INTERNET – AN ELITE MEDIUM WITH A FUTURE?

Generally speaking, the Internet in sub-Saharan Africa – in spite of considerable differences between the various groups of actors and states – remains an elite medium. The average sub-Saharan rate of use in 2005 was approx. 3% of the population. Many countries have a rate of lower than 1%. The findings of relatively low diffusion in sub-Saharan Africa have however to be expounded upon or qualified in several respects:

- > Firstly, in the populous countries of Nigeria and South Africa, Internet populations are each approx. 5 m people, meaning that there is a »critical mass« of users for whom ambitious internet-based projects and strategies also appear meaningful. The same applies to less populous countries with high rates of Internet penetration in the population in an African comparison.
- > Secondly, the Internet should not only be judged in terms of the immediate benefit to or the direct use by broad levels of the population. Alternative elites (e.g. non-governmental organisations, NGOs), which can act as multipliers, and also state and pan-African office-holders already require a high degree of modern ICT for their internal and external communication. This also applies to internationally operating commercial enterprises, universities and to African migrants (»Diaspora«) in developed countries.
- > Thirdly, the Internet can be useful in various important areas (e.g. good governance, strengthening civil society, health, agriculture, emergency management) along with other ICT such as mobile phones and radio.

There is however still a great need for the systematic monitoring and comprehensive evaluation of ICT4D activities. Without considerable improvements of the knowledge base in this area a large number of activities will probably also not be rewarding in future. The level of knowledge about and the co-ordination

of ICT-relevant activities are in need of improvement even within the development co-operation activities of individual donor countries.

Whether the promotion of ICT use in developing countries is politically advisable must be decided – in keeping with the international development policy consensus – according to the extent to which these technologies are suitable for contributing to overcoming poverty as well as to achieving the other Millennium Development Goals (MDGs) arising from the United Nations (UN) Millennium Declaration. Although many question marks remain and a stronger so-called »pro-poor«-orientation has been frequently demanded, considerable potential and also successes have been registered in fields such as education and health. What is more, the use of ICT can be practical when it comes to strengthening state and non-state structures, viewed as decisive for social development. In addition to reform countries and non-governmental organisations (NGOs), the New Partnership for Africa's Development (NEPAD) and the African Union (AU) are also important partners in Africa.

The overall assessment of the opportunities of Internet use is as yet mixed: It is true that there are examples of how the Internet can immediately play a useful role in the reduction of poverty and the achievement of MDGs (e.g. in the health sector). Its deployment however often appears premature, as certain basic prerequisites (ranging from reading and writing abilities in the population to good governance structures right up to power supplies) are lacking. The opportunities for Internet use are therefore currently limited to elites in the broadest sense, from teachers to non-governmental organisations and universities right up to national and pan-African political groups.

NO IDEAL APPROACH TO THE USE OF ICT FOR DEVELOPMENT

Current studies indicate in the first instance that the use of ICT has a positive effect on productivity and economic growth, albeit not to the same extent for all industries and in all countries. If a comparison is drawn between developed countries and developing countries, it can be seen that effect of ICT use on economic growth is greater in the former than in the latter. Economic and social development do not necessarily go hand-in-hand, in fact positive economic development can even be accompanied by an increase in social inequality, especially in developing countries. Social inequality, in particular when it turns out to be extreme, can moreover impede economic growth in the longer term. This means that a reliance on economic growth alone is insufficient for development policy



strategies and a policy of improving life chances for everyone must be accorded equal value.

In principle the diffusion of mobile phones, computers and the Internet follows the same pattern – universal growth while differences are being reinforced. Developing countries are indeed increasingly making use of these technologies; they are not however catching up with the developed countries. It is indisputable that several ICT4D projects have brought about positive effects, as is shown in various places in the TAB report. As a whole however the record thus far appears rather sobering: because a lot of projects were unsuccessful or could not be sustainably established, because development policy effects did not set in, because the use of ICT was not embedded in comprehensive development strategies, because the wrong technologies were backed, which were not suitable to the conditions, because no comprehensive and informed evaluations were carried out.

The overall discussion shows that there is no ideal approach to the use of ICT relevant to development policy. Among other things the following are regarded as requirements for the success of such a use of ICT: a strategic orientation towards the Millennium Development Goals; a consideration of the prevailing conditions in the country; an active participation of the persons and institutions directly involved; an intensified co-ordination between the German development co-operation organisations; long-term, sustainable planning; a continual review of project progress, and the avoidance of negative side-effects.

THE SITUATION IN SUB-SAHARAN AFRICA: MAKING UP GROUND WITHOUT CATCHING UP

When reviewing the general social circumstances as well as the situation of ICT connectivity south of the Sahara, a mixed picture appears: In spite of all of the progress made in important sectors, e.g. in relation to democratic forms of government, debt reduction and economic growth, overall Africa is the continent which over the past few decades has remained the most backward in a global comparison, with development appearing particularly unpropitious in many sub-Saharan countries. Concerning the information provided, it must be noted that the differences in sub-Saharan Africa and within the individual countries are on occasion very marked.

This ambivalent development – progress without catching up – is also apparent in the ICT sector. Following a long period of stagnation, there has been considerable growth in recent years, particularly in the mobile phone sector. This has

to do, among other things, with privatisations and liberalisations in the telecommunications sector from the 1990s, resulting in the establishment of competition in the mobile sector in many African countries. Both the pan-African institutions and the national governments have submitted ICT action plans, in which for example, the expansion of the African Information infrastructure, an improvement in information technology education from primary school up to universities or the creation of export-oriented ICT service centres are provided for.

ICT infrastructure in Africa, in particular the connection to the worldwide networks, as well as inner-African networking, remains poor. Potential improvements through a more intensive use of the undersea broadband cable along Africa's Atlantic coast were hardly achievable because of restrictive access regulations. The long-planned continuation of the cable on the east coast has been repeatedly delayed for both political and financial reasons. Due to the considerable extension of mobile phone use, the crisis of fixed-line telephony has been further aggravated and investment in this sector is not living up to requirements.

Radio is in first place in ICT use – its diffusion still clearly ahead of the second mass medium, television. Promoted also by policy reforms, a diverse radio landscape has evolved, funded partly by commercial, partly by public, and partly by development organisations, encompassing programmes in many African countries that are attuned to local information needs. The mobile phone has not only clearly overtaken the fixed-line telephone in its diffusion, but continues to exhibit high growth rates. Nevertheless Africa still takes last place in a comparison of the continents. For the main part it is the urban middle-class population groups who can afford a private mobile phone. There is however considerable potential in rural areas through joint use, which has already been exhausted to an extent in development co-operation projects. A similar picture to that of mobile telephony, albeit at an even lower level, can be observed in Internet use. Growth rates are relatively high, but the standard remains significantly behind that of other world regions. The costs of Internet use are still particularly high when compared internationally and thus prohibitively expensive for the masses of the poor in sub-Saharan Africa.

DEMOCRACY, GOOD GOVERNANCE AND CIVIL SOCIETY

The field of »Democratisation, Good Governance and Civil Society« is a main area of German development co-operation and partnership with Africa, focusing on new opportunities for policy, administrative and civil society actors. What



can ICT contribute to development in this field, and what are they doing so far, also with regard to supporting a democratic public sphere?

State and administrative action

Examining the scattered external and internal evaluations of e-Government projects in developing countries which are available, the impression is gained that the respective overall assessments are of little use for valid generalisations. There are evidently however a number of successful e-Government projects, also with regard to the superordinated goals of development co-operation. At the same time it also appears plausible that a high failure rate is assumed, especially where plans turn out to be unrealistic in relation to the given infrastructural, qualificatory and traditional administrative conditions. The focus on the improvement of the websites of state institutions, particularly discernible at the beginning of the decade, is most certainly deserving of critical regard, especially where it takes place without a general increase in the efficiency of internal administrative processes. In the medium to long-term however, the electronic accessibility of state institutions (especially people's representatives) and the feasibility of providing extensive information online, are appearing as advantages of e-Government even in sub-Saharan Africa. Better integration of organised civil society structures through the use of ICT is pressing. From the perspective of democratic governance, the fundamental question arises to what extent an improvement in the efficiency of government action is desirable in countries under authoritarian rule.

ICT do offer plenty of opportunities to make administrative and governmental action not only more efficient and more effective, but also to shape action to promote democracy, from which an essential contribution to the development of the whole of society can also be expected. Additional efforts will be required however in order to direct services towards poorer population groups and thereby to make a contribution towards overcoming or avoiding poverty. First of all the target groups within the poor population have to be precisely identified and their respective special needs determined. Furthermore it can be advantageous, – where Internet costs are still exorbitantly high – to establish start-up centres for e-Government or increasingly to use existing institutions (community telecentres, Community Media) for this purpose. In addition, the effects of e-Government on the promotion of development can be expected when the use of ICT is accompanied by extensive and sustainable administrative reform (including qualification measures at all levels, particularly in local administrations) and by an orientation towards the poor sections of the population.

Civil society and the public sphere

In sub-Saharan Africa there are a large number of civil society organisations, projects (also for development co-operation), groups, individuals as well as media actors, for whom the Internet is already of central importance, or could be if there access and usage conditions were improved. Added to that there is the intensive use by transnational networks, which are anchored in the world region or communicate with it intensively, as well as through the Diaspora. The key functions of the Internet for users south of the Sahara as well, are the easier opportunities for transnational (and regardless of distance in general) exchanges of ideas, as well as self-portrayal through websites, the use of information resources available online, the option to appeal to the public and the mobilisation of supporters as well as, for several organisations, the improvement of internal networking. NGOs often observe strong needs within the ICT sector, both from a quantitative and a qualitative viewpoint, therefore also regarding new ICT.

Operating a website is often regarded as a sign of professionalism. For a »partnership at eye level« with »Northern« actors (in the case of NGOs in particular from development co-operation) it is moreover important to be able to use email. Transnational communication is furthermore of great significance for civil society organisations, political opponents and other actors, who have concerns, which they want to bring to an international, pan-African or national audience (including the Diaspora). With regard to the NGOs and civil society networks specialised in ICT topics, it can be noted that these form a diverse, networked ICT and Africa-oriented public sphere which remained lively even after the UN World Summit on the Information Society (Tunis 2005). Their specific skills are coming increasingly into play in the activities of African civil society as a whole, as is shown by the example of the women's movement.

The Internet can also be a relatively inexpensive means of addressing the interested public (e.g. in comparison with newspapers, leaflets or posters), where it first and foremost complements other channels of communication. Its direct widespread impact is relatively low-level, yet it reaches potential multipliers and influential actors; makes possible the provision of extensive, publicly accessible information and moreover provides a high degree of interactivity. Emails have been of central importance for political discussions for a long time and also serve to keep a large number of people in sub-Saharan Africa informed. Numbered among the risks accompanied by Internet use are new opportunities for propaganda, communication and recruitment for political fanatics.



SUMMARY

The use of the Internet, in combination with other ICT, could also improve the internal networking of a number of organisations and the efficiency of their work in general, in particular with regard to partners located faraway. In journalism the Net is in many places already an integral part of the job: Whereas the online services of established newspapers and magazines only represent (albeit, e.g. with an eye on the Diaspora, considerable) additional value, the Internet has become an important research tool and means of communication in itself for journalists. This does not only apply to big-city journalists, but even more so to their colleagues in peripheral rural areas. Besides, anonymous online publications on politically sensitive issues are relatively unperilous. Media Development Co-operation (MDC) often focuses itself strongly on education and further training courses and has – at least in the case of Germany, although in the estimation of the World Bank worldwide – not the significance within development co-operation, that it is due in view of the importance of the public sphere for democracy. In particular ICT equipment for journalists appears to be in great need of improvement.

The results of the TAB survey show that the Internet is often only of greater political use, even for groups of actors with a high »Internet affinity«, when it is combined with other means of communication. In view of the broad diffusion of radio in sub-Saharan Africa and the rapidly increasing number of mobile phone users, a primarily complementary use of the Internet suggests itself. The use of SMS is of particular interest when strategically using ICT for political campaigns and protests (»e-Activism«) in developing countries, and there are also initial approaches and considerable potential for SMS-based political activism south of the Sahara, e.g. for the purpose of civil society election observations. The linking of SMS and the Internet offers special potential in e-Activism campaigns, whereby the Internet can be used to address an interested and also international audience, as well as to organise the campaign itself.

A lot speaks for the assumption that a numerically substantial group of users in a number of countries also use the Net for the exchange of political information and communication independently of NGOs. This can be clearly seen not only on the websites, mailing lists and online networks of providers of professional journalism and transnationally organised civil society networking organisations. Even the political websites of individuals and small groups (particularly in populous countries with relatively high Internet penetration rates such as Kenya, Nigeria and South Africa) already form relevant public spheres. There is at least potentially a pan-African process of self-understanding emerging here which involves the Diaspora. One political benefit is that Africans in the Diaspora who often have greater resources and international contacts at their command can be

directly appealed to with reports from home. Online discussion forums for the Diaspora themselves can in an ideal situation at the same time become places for the exchanges of ideas between supporters of enemy groups. They may however also reflect and even deepen existing divisions. The growing significance of the African networked public sphere means that in a number of countries the government or individual politicians attach substantial weight to this public sphere and their own Internet use.

ICT USE IN INDUSTRY AND TRADE

Networked computer applications in industry relate on the one hand to the company-internal, business-oriented and on the other hand to the cross-company, trade-oriented sector. The fact that these applications are not widespread in Africa in comparison with most countries in the Northern hemisphere is hardly surprising. In addition to the inadequate preconditions for the use of ICT, the current underlying conditions in the industrial sector are not »computer-friendly«: Seen as a whole, industry in sub-Saharan Africa is still largely characterised by agriculture, the informal sector is predominant both in the country as well as in the bigger towns. Trade, transport and transaction infrastructures (money payments, banks) are unsatisfactory almost everywhere. Against this background there seems little point to an isolated promotion of ICT use in industry. It is only possible to exploit the potential of ICT use that is undoubtedly available for industry if this is integrated into a comprehensive and economic development policy oriented towards sustainability, and it is possible to imagine e-Business and e-Commerce making up ground or catching up.

In small and medium sized companies the telephone has become more or less standard for business communication, whereby mobile phones predominate. Nevertheless, a relatively high demand for (where possible inexpensive) fixed-line telephones has been expressed, which could then also be used to fax and for the Internet. Computers and the Internet are much more rarely available, especially in the informal sector. Immediate economic potential does exist e.g. for rural small businesswomen supported by micro-credits in the mobile phone services field.

One much discussed proposal involves banking and payment services by mobile phone, with which an existing infrastructural gap in payment transactions could be closed. The few existing systems, which are in the early stages of propagation, are run either by the banks themselves or by mobile phone operators. These are however only run on a credit balance basis and are limited to small amounts.



This means that they do not offer a real alternative to a bank account. The further development, in particular of bank-independent mobile payment services, will depend upon the attitude of politics to this innovation (particularly with regard to regulation) as much as on the influence of the banks. These are not usually interested in competitive new actors such as mobile communications companies offering autonomous payment transaction services to corporate or private customers.

Computers and the Internet are by all means widespread in the formal sector of the economy. Information, communication and marketing applications dominate Internet use, whereas business transactions undertaken directly on the Internet are comparatively rare. These can be most likely found in the subsidiaries and branches of major international corporations or in the African suppliers of these multinational enterprises. Here the question of the necessity of the use of computers and the Internet does not normally arise, as this is taken for granted in international economic relations. Certainly African enterprises compete directly with large numbers of other enterprises from developed countries and developing countries through their participation in international electronic trading centres. This creates opportunities, but also considerably increases the economic pressure. Additional, and for individual companies also alternative strategies should therefore target inner-African, national and local markets or attempt to fill niche markets in international trade with specialist African products.

Seen as a whole, the problem for African industry is not that the use of ICT represents a substantial obstacle for internationally oriented African companies, but rather that there are too few of these companies and that the basic economic policy conditions are bad. From a development policy viewpoint, that is why ICT promotion ought to be a part of sustainable economic development policy, which has as its focus of attention the improvement of African trading opportunities.

EDUCATION, RESEARCH AND TECHNOLOGICAL DEVELOPMENT

In the education sector for children and adolescents, the thesis of the motivating function of modern ICT cannot be denied. In spite of the hazard, again much discussed recently, that children and adolescents use computers and the Internet in ways that seem inappropriate or harmful from an educational viewpoint, the creative use of new ICT and access to the Internet also undoubtedly open up opportunities for them. However an ICT-facilitated »Opening to the World« can contribute to the destruction of cultural traditions which are worth preserving.

If this is taken into consideration, and moreover opportunities are created to put the acquired skills to use in professional life in the country (or at least in Africa), then the positive effects should however predominate.

There is already some experience in sub-Saharan Africa of projects on computer equipment and Internet provision to schools as well as on the use of ICT in teacher in-service training. School projects seem conducive to development, if for one thing ICT skills are specifically promoted, and for another thing the sustainability of the projects is ensured through the creation of suitable basic conditions (e.g. fixing the costs for Internet use for schools, setting up of cheap advisory and maintenance services for schools, utilisation of the potential offered by free and open source software as well as finding solutions to the problem of waste disposal). Software and hardware solutions should be selected which also allow older computers to be used effectively, ensure no exorbitant follow-up costs arise and that the expenditure for maintenance and administration is kept as low as possible.

The discernible tendency to a strengthening of African e-Learning skills and content will appear to be effective in promoting development, when the infrastructure of the Internet (including the cost aspects) in sub-Saharan Africa has been considerably improved. Access to knowledge and information through the Internet can satisfy a fundamental requirement for teaching staff in primary and secondary sectors, for self-study and different actors involved in informal teaching (including development co-operation employees). In teacher training and other areas of tertiary education, e-Learning and access to the Internet already provide large numbers of opportunities, even if the content and services do come from the »North«. Assuming there are sufficient incentive and private time resources available on the part of the learners, the institutions or companies in which they work can indirectly profit. Additional motivation through an enthusiasm for technology and a general improvement in individual opportunities on the labour market should also not be underestimated in their importance here. At the same time however, it is important to ensure that there are also actual material incentives, in the case of teaching staff in the primary and secondary sectors, to use the skills acquired in the education sector.

Scientists have very high Internet requirements, particularly as a result of their mostly difficult work situation in sub-Saharan Africa. The opportunities available for rapid information and communication flow, research and networking are not only fundamental for scientific work nowadays, but they have considerably greater importance in sub-Saharan Africa than in countries which are further developed. In terms of cost-benefit aspects, the expansion of libraries through



digitally available knowledge appears to be a promising opportunity, whereby however there are still considerable challenges to be faced when considering for example the facilities available in African university libraries, ICT qualifications and the development of acceptable models of open online access to knowledge. The politically desired closer interconnectedness and increased efficiency of the African research landscape are at any event inconceivable without considerable improvements in the ICT sector. This is particularly so for the declared goal of not only developing centres of excellence, but rather of encouraging the research landscape across the board. The benefits of ICT however are in part severely restricted, in particular with regard to time-consuming international co-operative work, due to basic difficulties relating to the work and life situation of African scientists. Universities could nevertheless still promote the use of ICT for society as a whole and moreover contribute to a distinct African technology development in the software sector. Alongside fundamental infrastructural deficiencies in sub-Saharan Africa or at the universities themselves, the main barriers to development thus far are the lack of ICT-relevant skills and often suboptimal governance (especially on the part of politics and university managements).

The fact that African and »Northern« actors attribute ICT a key role in strengthening education, research and technology development in sub-Saharan Africa seems on the whole justified. Developments and potential in the ICT sector show that the demand and development-oriented use of modern ICT can be a central element in the achievement of the visions of a knowledge-based society and economy in sub-Saharan Africa.

COURSES OF ACTION

What follows from the results of the TAB project for German development co-operation with Africa in the ICT sector? Courses of action for certain selected fields are shown below, in which the focus is once again on the three thematic areas central to the investigation.

Infrastructure and regulation

Support of African countries as well as pan-African and international actors in improving ICT infrastructure and regulation ought to be continued and intensified, as the greatest positive effects across the fields of activity are to be expected here. The priority objectives are a reduction of costs for ICT use, equal access for African inland developing countries and a considerable improvement in the situation in rural areas and in socio-economic peripheral areas in general. A

basic prerequisite for use of this infrastructure to promote development is the strengthening of civil society actors at all levels.

One outstanding activity in this connection is the implementation of the East African Submarine Cable System EASSy, in which the constructive role that Germany is currently playing should be retained. A user-friendly implementation and formulation of this project, taking the particular needs of inland states into consideration, could also lead to an improvement in what, seen as a whole, is an unsatisfactory situation for the West African Submarine Cable System (due to competitive pressure by EASSy).

Africa the continental neighbour

There is a consensus that, as a continent neighbouring Europe, Africa deserves greater political and public attention as well as the stepping up of transcontinental communication and co-operation. Regarding the role of the Internet in particular and new ICT in general, the relevant groups of actors are, among others, the African Diaspora in Europe, Africanist scholars, non-governmental organisations in Africa and Europe, and journalists. The exchange of ideas between citizens of African and European countries is also allotted great value, with an eye on contacts between young people for example.

Internet communication can at the same time also play an important role. Through the creation of public or government-funded online portals respectively (e.g. with the motto »Africa the Continental Neighbour«), which would ideally be multilingual, hubs for exchange could develop. The Internet would thus also be increasingly used for the purpose of creating a differentiated image of Africa in German public awareness. Improved co-ordination between German development co-operation and cultural and educational policy would be helpful. Processes of cultural globalisation should be conceived as processes of learning from one other. Also through the opportunities which the Internet has opened up for trade (e.g. music) and advertising, there are furthermore economic opportunities for African artists and the local cultural industry.

Good Governance, democracy and civil society

Good governance as a sphere of activity arises in several respects as an emphasis of ICT-related activities in German development co-operation: For one thing the internationally recognised commitment made by Germany in this field could gain through additional prominence in the field of ICT4D. For another thing there are already relatively large numbers of ICT4D activities in German



development co-operation. Finally, several particularly important development goals can be reached more easily in this context by ICT, e.g. fighting corruption, strengthening Africa's civil society and media landscape, developing the rural regions and promoting pan-African and regional integration.

The »African Peer Review Mechanism« (APRM) is of particular importance in this connection. This NEPAD Good Governance Programme for the mutual support and supervision of African states is regarded as a central element of pan-African democratisation efforts. To make this instrument even more efficient requires increased support from national APRM processes. There is a great need of ICT on the part of civil society institutions, which are to play a key role in the APRM processes and beyond. It is furthermore advisable to use the Internet to improve co-operation between state institutions and organised civil society. With regard to a further priority of German Africa policy, namely the strengthening of parliamentarianism, more intensive co-operation and the support of African partners in the ICT sector also present themselves, e.g. with the Pan-African Parliament (PAP) of the African Union (AU). There are other fields in e-Government that are relevant on a national level, namely financial management in public administration, health care and health management, access management through setting up One Stop Shops as well as a general improvement in the provision of services in rural areas. Particular value is to be placed on the reasonable consideration of the respective local conditions. This applies among other things to the infrastructural prerequisites, the ICT skills of the political and administrative institutions, their working cultures as well as the linguistic diversity present in many African countries. Concerning local governance structures, yet more reliance could be placed upon on the integration of ICT components into the strengthening of civil society. Likewise a continuation of the promotion of Geo Information systems would be helpful, for which there is a considerable need in sub-Saharan Africa. Special opportunities arise from the use of ICT for fighting corruption.

With regard to civil society and journalistic use of ICT, which is already relatively strong within sub-Saharan Africa, intensified efforts on the part of development co-operation are to be advocated: Alongside the (almost self-financing) creation of stronger links between German development co-operation and other organisations with these groups (for a more intensive exchange of ideas and the creation of new publication opportunities), as well as the continuation of qualification measures in the media and for NGOs, the improvement in the infrastructural conditions and the reduction of costs for ICT use are of central importance. In addition to the upgrading of Media Development Co-operation and the continuation of the ICT-related education and further training measures, it would be

useful to increase the support for democratic media actors and NGOs through the provision of ICT equipment. It would also be worth considering supporting a longer-term »e-Activism« pilot project based on a »technology mix« (e.g. Internet, radio and SMS), with the goal of improving the opportunities for action by civil society groups (e.g. women's organisations) and contributing to fair democratic elections. The facilitation of the establishment of ICT-based warning systems for populations in war zones, which could then be used for international support and protective measures, would also be conceivable. Other relevant measures would be a German venture towards setting up an international ICT fund for non-governmental organisations in the poorest countries, as well as the stimulation and promotion of Public Private Partnerships for the ICT support of non-governmental organisations in general.

Education, science and ICT skills.

Although a great need for further evaluation and research relating to the use of ICT4D in the education sector remains, several fields of application can be deemed to be particularly well suited. Education and further training of teaching staff can be mentioned here as well as distance learning, which is ascribed great importance particularly in Africa. Improved ICT equipment for schools, in connection with sustainable concepts for use and better facilities in general also appears meaningful. Potential partners here are the NEPAD e-Africa Commission and SchoolNet Africa. In contrast the goal of providing every child with its own computer is highly contentious. Concerning the »One Laptop per Child« foundation (OLPC) and the vision followed with the so-called »\$100 laptop« initiative, objections have been made among other things to their pedagogic ideas and funding concept. Based on the for better or for worse potentially major effectiveness of this initiative, welcomed as a step in the right direction by the Federal Minister for Economic Co-operation and Development, accompanying measures from development co-operation would be useful. This also applies to the rival projects and products. It is not only in this connection that a strengthening of African capacities in information ethics, technology assessment and expertise on the ecological effects of ICT use is desirable.

There are special opportunities for Internet use in sub-Saharan Africa in the university sector, also with regard to Africa's own technology development. This relates both to the strengthening of science and research and its international integration as well as also its role in the national innovation systems. The prerequisites for rapid success are, alongside improvements in infrastructure and a commensurate prioritization by politics and science management in Africa, intensified activities by »Northern« actors from scientific-technological co-op-



eration (WTZ) and German development co-operation. The European Union (EU) has become increasingly active here recently. In this connection it would be wise to further support the sub-Saharan academic consortia to jointly acquire more bandwidth at low prices (»bandwidth consortia«) as well as to further appreciate the National Research and Education Networks (NREN) and other academic networks as strategic partners. A key role in the intensifying of scientific co-operation including Internet use could be played by African studies and other research projects which are directly Africa-related. Of particular importance is also the experience gained in completed and current research projects, in which African and European or German partners have already co-operated in the ICT sector. The prioritisation of e-Learning in Africa undertaken by various German institutions appears meaningful in view of the special potential which exists in sub-Saharan Africa in this respect. Also, developments in the area of free and open source software offer special opportunities, however assume a substantial improvement in relevant expertise and the greater popularity of this type of software in Africa.

Overview of the courses of action

The following options for action, which relate primarily to Africa, appear particularly relevant for development policy in the light of the results of the TAB survey:

- > *Regulation*: Intensification of the consultation and support of African partners in telecommunications and media regulation to promote development. Corresponding intentions on the part of the Federal Ministry for Development and Co-operation (BMZ) already exist.
- > *Large-scale infrastructure projects*: Continuation of activities to support the implementation of ICT infrastructure projects to promote development. Of particular importance is the planned East African Submarine Cable System EASSy.
- > *Promotion of deprived areas*: Maintenance of the spotlight of ICT4D projects on rural and other peripheral areas. A more systematic use of the ICT4D-related synergy effects which arise in projects of development co-operation in the same area appears advisable.
- > *Reproduction of success stories*: Propagation and geographical expansion of successful ICT4D projects (»scaling up«), whereby local specifics may not however be ignored.
- > *Mobile communication*: Increased consideration of the diverse potential of mobile communication in fields such as industry and trade as well as democratic and civil society engagement, whereby special attention is merited for opportu-

- nities for interconnecting with the Internet and other ICT or media.
- > *e-Government*: Continuation and intensification of public ICT use for administrative reforms and development, in particular also for fighting corruption. The focus could be on public partners (and in particular also parliaments), who already practice good governance, as well as on pan-African and regional actors.
 - > *Civil society*: Stepping up of the support of NGOs and other civil society actors in the ICT sector (especially with regard to the APRM process, on women's organisations as well as on civil society groups in crisis areas and endangered democracies). The (co-)support of a cross-media e-Activism pilot project and of ICT-based warning systems for populations in war zones is also worthy of consideration here.
 - > *Media and the public sphere*: Increased activities in the field of Media Development Co-operation, in particular in the equipping of editorial offices, and with regard to the working conditions of journalists, as well as intensified appeals by the German federal government to governments which practise censorship and take reprisals against Internet publics.
 - > *Image of Africa in Germany*: Promotion of a differentiated image of Africa, strengthening the options for action of the Diaspora as well as stepping up the cultural exchange of ideas and trade through the Internet.
 - > *ICT for education and ICT skills*: Expansion of successful ICT applications for further training (especially e-Learning) and expert support of African partners (e.g. in the school sector, in small and medium-sized enterprises, in the health sector, in non-governmental organisations and in public administrations).
 - > *Information and knowledge-based society*: Strengthening the sub-Saharan universities and research landscape through more intensive activities in and on the ICT sector, also through increased co-operation with industry (e.g. on ICT services) and the targeted closer co-ordination between scientific-technological co-operation (WTZ) and development co-operation.

ON THE STRATEGIC ORIENTATION OF GERMAN DEVELOPMENT CO-OPERATION

Deficits can be established in relation to the strategic orientation of German development co-operation on the subject of ICT4D. In order to correct these, the report proposes a broad dialogue, in which policy, science, industry, civil society and development co-operation actors as well as actors from the developing countries including the Diaspora should take part. On the basis of a comprehensive review and discussion, a strategic answer could be worked out to questions relevant in the ICT4D context. The following general principles among others can be particularly emphasized:



SUMMARY

- > Although the focus on the Millennium Development Goals for ICT use should be adhered to, they should be expanded to include the three programmatic spheres of activity – in addition to »development and reducing poverty« – established in the Millennium Declaration. These are: »Peace, security and disarmament«, »Protection of our common environment« as well as »Human rights, democracy and good governance«.
- > The use of ICT is subordinate to the strategic goals of reducing poverty and the Millennium Declaration and has to legitimise itself through specific needs. Existing interests of development policy target groups should be taken up in co-operation with these.
- > The prerequisites for the use of ICT in Africa are often especially difficult. It is of little use to effectively artificially fabricate the application requirements in selected pilot projects, if these cannot be guaranteed permanently and elsewhere. In selecting technology, advanced digital technologies do not always represent the best choice. Moreover a »technology mix« often seems the best way forward.

The question as to the opportunities which arise through the Internet in developing countries is therefore only one aspect of the superordinated question as to the benefits of ICT for specific development goals. Until now Internet communication in the global »South« has been above all relevant for various kinds of elites, who are already supported to different extents in German development co-operation (e.g. e-Government, journalists' vocational training, promotion of educational institutions and the support of civil society organisations). In a world which is largely organised through Internet-based communication, the populations of developing countries also require access to the whole of modern ICT. The Internet, as a core element of this whole and the driver of processes of globalisation, is therefore indispensable for an increasing number of people and organisations in the »South«. It can improve the chances of democracy and modernisation, help to promote social restructuring and further integration in the processes of cultural, economic and political globalisation. Social change and greater participation in globalisation processes however also involve new challenges. If the developing countries and their partners do not face up to these challenges, the spread of modern information and communications technologies could further intensify social inequalities.

SUMMARY



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