

Enabling *people* to make technologies work for them

ITDG's response to the
Human Development Report 2001



ITDG's Mission is to demonstrate and advocate the sustainable use of technology to reduce poverty in developing countries

ITDG works directly in Latin America, East and Southern Africa and South Asia. It spreads its knowledge worldwide through advocacy, consultancy and publishing.

Among ITDG's technology programmes of relevance to the HDR are: food production; agro-processing; renewable energy; manufacturing and ICTs.

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Summary

The Human Development Report 2001, '*Making new technologies work for human development*', is intended by UNDP to be a manifesto for a new partnership between technology and development. This debate is current in other international fora, including the OECD, UNESCO, FAO and CBD. ITDG intends to continue to be an active participant, drawing on 35 years' experience of working with grassroots partners to build their technological skills and capacities.

In this response to the HDR 2001, ITDG will emphasise the following actions required to achieve the policy objectives of the HDR:

- 1. Building the technological capabilities of poor people**
 - Starting with poor people's capabilities, not with technologies.
 - Enabling poor women and men to assess the extent to which new technological options could provide them with sustainable benefits and can be controlled by local communities, their institutions and national governance structures.
 - Stimulating and supporting intermediary organisations.
- 2. Creating innovative partnerships and new incentives for R&D**
 - The international partnerships for technological R&D, recommended by the HDR, should have as an output the creation of greater developing country capacity for R&D.
 - Public support and partnership should be extended to low-income and marginalised technology users to undertake incremental R&D.
- 3. Protecting social and traditional knowledge**
 - Genetic resources for food and agriculture should be kept in the public domain and protected from private expropriation through international agreements such as the IU-PGRFA.
 - Alternatives to existing or proposed intellectual property rights regimes should be developed, which recognise social and traditional knowledge and common property resources and better protect the rights of poor women and men and their communities.
- 4. Expanding investment in technologies for development**
 - Additional resources should be provided through ODA.
 - Bilateral and multilateral donors should adopt procedures that ensure that all technological options are considered by all projects and programmes.
 - Technology users should be enabled to communicate with and influence technology developers in publicly funded R&D systems.
- 5. Providing regional and global institutional support**
 - Capacity building is required to enable civil society organisations and NGOs to raise awareness of technology policy issues.
 - An active campaign is required to raise the profile of technology in international development policy processes.
 - Complementary recommendations about how to implement national strategies that enable poor people to achieve technology choice should be developed.

Introduction: enabling *people* to make technologies work for them

The HDR 2001 issues a clarion call for the international development community to '*ensure... that the potential benefits of technology are rooted in a pro-poor development strategy*'. The HDR starts from the perspective that development is "*about expanding the choices that people have to lead the lives that they value*". It notes that: "*People must be free to exercise their choices and to participate in decision-making that affects their lives*" and that "*fundamental to enlarging these choices is building human capabilities*."

ITDG believes that an important dimension to the capabilities that determine 'the range of things that people can and do or be in life', are technological capabilities. These include the capabilities:

- to analyse problems and obstacles for technological advancement;
- to identify and evaluate potential technological solutions;
- to select, adapt and apply new technologies; and
- to evaluate effects of new technologies.

The HDR rests on an orthodox technology paradigm. It proceeds from a conventional view of the process of technology development and diffusion, wherein research in the 'laboratory' is followed by adaptive development, and then diffusion through the market. This view reflects the process in industrialised countries where, the report points out, most expenditure on R&D takes place. But it bears little relation to the technological change experienced by the majority of poor women and men in developing countries.

The report focuses on the 'new' technologies – principally ICTs and biotechnology, with mention of renewable energy technologies and nanotechnology -- and examines how they can be made useful to poor people. Its starting point is the technologies, and it overlooks the vast range of technologies in daily use by poor women and men.

By contrast, ITDG's approach is founded on Schumacher's dictum: "*find out what people are doing, and help them to do it better*." That is, ITDG starts with people and enables them to achieve sustainable livelihoods by building their own technical and organisational capacities, achieving technology choice, and adapting and improving technologies.

The HDR 2001 addresses how 'countries' choose technologies and apply them. While countries' technology policy and regulatory frameworks, as well as economic environments, influence choices, it is people, not countries, who actually make technology choices. The degree to which women and men are poor (lack capabilities) determines their technology options. In general, poor women and men in developing countries lack technology choice. As the HDR itself notes, for example, long-established modern technologies such as electricity and telephones are still not accessible to billions of people.

ITDG's local partners would subject technology options to the '3 As' test – are they Affordable, Accessible and Appropriate? The HDR often assumes that the 'new technologies' will be appropriate for poor people; whereas ITDG sees a critical requirement for potential users to be able fully to assess and analyse the potential impacts of a new technology before choosing that option.

As an example, the HDR asserts that agricultural biotechnology will be desired by developing country farmers because it offers higher yields, better nutrition and a reduction in inputs. Each of these 'benefits' is objectively questionable. But the key question is whether poor people believe the technology will benefit them. The HDR mentions one instance where farming communities were enabled to make that assessment – ActionAid's 'jury' in India. But the report does not mention the result, which was that by a 2:1 majority the jury rejected GMOs, called for a moratorium on their commercial release, and requested an insurance system to protect their livelihoods from any damage¹.

¹ 'ActionAid's Citizens' Jury Initiative: Indian farmers judge GM crops', Wakeford and Wijeratna, ActionAid July 2000. <http://www.actionaid.org/pdf/jury.pdf>

Similarly the HDR assumes that ICTs are applicable to the needs of the poor, and provides several examples. However, ITDG's research shows that convincing sustainable models have yet to be fully proven². Many ICTs initiatives begin with the technology, and not with the information services that poor women and men need to make their livelihood choices.

Such assumptions can be fatal to the cause of using technology to reduce poverty because of the opportunity costs involved. Biotechnology is starting to dominate research and development priorities, policy approaches and commercial practices around the world. By contrast, low external-input sustainable agriculture -- arguably a more accessible, appropriate and affordable set of technologies since it is based on the skills and knowledge of poor people themselves -- receives little official backing.

Similarly, ITDG's fieldwork with ICTs points to an approach which builds on the existing information and communication systems of low income communities, and may well emphasise 'old' technologies such as community radio and villager-to-villager communication.

Building the technological capabilities of poor people

The HDR makes good recommendations on building the technical capacities of 'countries' to make and apply technology choices. But equally crucial is building the capacities of poor women and men to manage technical change.

Poor people must be enabled to make technology choices. Most poor people in developing countries (e.g. 65-75% of sub-Saharan Africans) do not have access to formal sector employment. They must forge their livelihoods in the private informal sector, working in their fields, homes and small workshops, making vital decisions about the best use of their limited assets in order to survive on the tightest of margins. They do not invest lightly in new techniques.

Poor people will invest in technical choices which are accessible, affordable and appropriate for them. In ITDG's small scale rural electrification projects, more than half the capital comes from the communities in either cash or labour³. But where a technology does not meet the 3 As test, they will not invest. The solar cooker, despite its cheapness, has not been adopted by poor people because it is inappropriate to their lifestyles and labour patterns. Building poor people's capacity to make these choices means not just 'bringing' new technologies to their doorstep, but addressing their organisational, management and marketing skills; opening new channels of information and knowledge; and making credit and markets more accessible.

For example, research and development do not happen only at the macro level. In the private informal sector R&D happens mainly at the level of the micro-enterprise. Moreover, the need for incremental innovation and adaptation characterises poor people's livelihoods. It is also vital to recognise the differential access to technology choice within and between communities, and not least between women ('the invisible technologists'⁴) and men.

A key question raised by the HDR as a whole is what mechanisms, actors and institutions can mediate effectively between the global and local levels -- bringing technology choice, information, knowledge and skills to poor women and men outside the 'hubs'; and enabling poor women and men to operate above the 'local' to help determine the choices and the policy frameworks made at higher levels.

² 'Information and Communication Technologies (ICTs) for Sustainable Livelihoods: Preliminary Study', O'Farrell, C, P Norrish A Scott, ITDG/AERDD 2000; 'Enterprise Development and ICTs: Research on innovation and best practice', Intermediate Technology Consultants for DFID, 2001

³ 'Best practices for sustainable development of micro hydro power in developing countries', Khennas and Barnett, World Bank March 2000

⁴ 'Supporting the invisible technologists', M Foster, Gender and Development Vol 7 no 2, 1999

ITDG's experience, especially in food production and renewable energy, shows that intermediation is a key component in the success of technology projects. For example, the number of poor and isolated villages high in the Peruvian Andes which now have a modern commercial energy supply is growing, due to an ITDG intervention which both builds the capacity of the communities to build and manage small scale hydro power, and has brought in financial credit from a revolving fund provided by the Inter American Development Bank⁵.

If renewable energy, biotechnology and ICTs are truly to be used sustainably by the poor, then this kind of on-the-ground, practical intermediation will need to be achieved on a far more widespread scale.

The HDR recognises and accurately analyses many of the key constraints, barriers and market failures which affect people's technological capacity, and makes welcome policy recommendations. But these are mainly at the international level. National technology policies are now required; but the discussion on how to implement these in ways that support poor people's technology choice will need much further development.

Creating Innovative Partnerships and New Incentives for Research and Development

The HDR proposes taking advantage of the 'network age' to establish virtual, international research communities, pursuing research driven by the needs of the poor in developing countries. Such communities could span the developed/developing country divide incorporating private industry, university researchers and public institutes in a "triple helix".

The intertwining of public, university and private efforts is at the heart of new approaches to technology, but would this approach work for R&D in more traditional technologies?

The emphasis on R&D partnerships addressing the needs of poor women and men is welcome, but to what extent can they be accountable to the ultimate users?

Suggestions are made for incentives to establish such partnerships and for basic principles to guide such partnerships. The report recognises, however, that there is potential for conflicts of interest in such R&D partnerships, particularly with respect to IPRs. Differences in the interests of partners, we would suggest, will also influence the nature of the partnerships and be a factor in influencing their R&D agenda. It is likely that the more powerful partners (usually those from industrialised countries and those from the corporate sector) will reap the greatest returns, and the extent to which they will contribute to the genuine sharing of knowledge and the development of R&D capacity in developing countries is open to question.

Therefore ITDG proposes that the key output of North-South, and South-South, partnerships for technology R&D, whether in new technology fields or more traditional ones, should not be "faux collaboration" or 'more R&D'. Global public investment should be focused upon creating R&D capacity in developing countries whilst ensuring that this new capacity is focused on the needs of the poor. This capacity is a pre-requisite to intermediate the new technologies.

Protecting social and traditional knowledge

The HDR 2001 contains a strong section calling for fair implementation of the TRIPs agreement, and draws attention to the difficulties developing countries face in implementing IPR regimes in compliance with international agreements. However, the weight of the HDR's argument is in favour of adaptation of current regimes, rather than a proposal for radical alternatives that would recognise social and traditional knowledge, and would better protect the rights of poor women and men and their communities.

Prevalent trends in the commodification and privatisation of traditional knowledge are more threatening to the livelihoods of the poor than the report suggests. This is especially so in the transfer of knowledge and genetic resources for food and agriculture from the informal into the formal sector, and from the public domain to private ownership.

⁵ Winner of a Clean Technology Award from the Climate Technology Initiative, 2000

Genetic resources for food and agriculture should be kept in the public domain and governed under community rights, free from the threat of international IPRs and privatisation. As an example, the FAO International Undertaking on PGRFA could provide a useful model of how to maintain open access to genetic resources, ensure fair and equitable benefit sharing and recognise Farmers' Rights to access to, control over and free exchange of seeds, other genetic resources and associated knowledge.

This contrasts with the uniform approach to intellectual property proposed by WTO/TRIPs. There should be a substantive review of article 27.3(b), independent from any review of the agreement overall, and not subsumed within the new round of trade negotiations. Where conflicts appear between international treaties with respect to genetic resources and local/indigenous knowledge, the environmental treaties should have precedence.

Expanding Investment in Technologies for Development

The HDR 2001 highlights the enormous gap that exists between the resources devoted to technological R&D for markets in the industrialised world and those which address the needs of the poor in developing countries. The report also recognises that market forces alone simply will not redress this and asks "*Why is public funding of research for human development needs so low?*" The reliance on market mechanisms in public policy over the past two decades could be said to have contributed both to the neglect of pro-poor R&D and to have reduced overall public sector spending.

ITDG therefore warmly welcomes the call by UNDP for more resources for R&D on 'technologies for poor people's needs', including the call for increased amounts of ODA to be earmarked for this R&D. The HDR provides some innovative suggestions for how these funds might be provided. We would emphasise, however, that these should be additional funds - bringing ODA closer to the 0.7% target.

Over a decade ago a study by ITDG for the DAC⁶ found that there was little explicit consideration of technology in the decision making of bilateral donors. There has been nothing in recent years to suggest that this has changed. For example, the World Commission on Dams⁷ found it necessary to revise completely the decision-making framework for large scale water management projects, and to emphasise, as ITDG had advocated, that all technology options should be considered in the first phase of the project cycle. The lack of information available on how much ODA is spent on R&D, or capacity building for R&D, is one aspect of this neglect of technology. The proposal for improved information about the support provided for R&D by bilateral and multilateral donors could be usefully supplemented by strengthening the way technology is considered in decision making on all programmes.

The approaches suggested for providing additional funding for R&D may well be effective in releasing additional resources from the donor community. However, in themselves they may not ensure that R&D does in fact address the needs and priorities of poor women and men. Donors and national governments are all too likely to influence, if not dictate, the R&D agenda, directing resources to R&D organisations which have more connection with international networks than with poor communities in their own country. Donors themselves are uncertain that the R&D they support does meet the needs of the poor - hence the review, for instance, of the CGIAR. Even with funds available therefore there will still be a challenge to ensure they are deployed to meet the needs of the poor.

To ensure that the voices of the poor are heard in setting the R&D agenda, mechanisms are needed to facilitate communication and feedback between low-income, marginalised technology users and the technology developers. This may well entail the development of appropriate intermediary institutions, but it does require consideration of the user-developer

⁶ 'Donor influence on choice of technology', R Jackson, paper presented at Choice of Technology seminar of DAC expert group on aid evaluation, ITDG June 1991

⁷ ITDG was a member of the WCD Forum.

communication as an integral part of the national technology R&D system/policy called for by the HDR.

Means are also needed to ensure that support is provided to technology adaptation and development by low-income producers themselves, recognising that technology development is primarily a continuous process of incremental changes and that these changes are often made by technology users. Though the HDR plays down the relevance of small initiatives for R&D, these should be supported as they may well be better at addressing the real needs of the poor. National policy, and donor support, should seek to establish the frameworks that facilitate this user-led technology development, and take advantage of the 'network age' to enable ready exchange of information about technologies.

Providing Regional and Global Institutional Support

The HDR rightly places considerable emphasis on the critical role of national and global policy in determining whether technology is applied effectively to the reduction of poverty and inequality, and to human development more generally. The report recognises that "Technology-related problems are often the result of poor policies, inadequate regulation and lack of transparency" (p. 4). Governments need to recognize that 'technology policy affects a host of development issues, including health, education and job creation' (p. 8).

Establishing the appropriate policy and regulatory frameworks, at national and international levels, however, is more complex than perhaps suggested by the focus on fair application of global rules and new international initiatives. Just as technology policy affects many sectors, other policies affect technology development. National as well as global rules need to be applied fairly, and across the full range of public policy. National policy, particularly in respect of 'appropriate' macro-economic policy, is constrained by global frameworks and the influence of international actors.

NGOs have a role to play, says the report, as watchdogs and in raising 'public understanding of difficult issues'. Environmental and Human Rights NGOs are already doing this, and effectively. However, few NGOs are focused on technology and technology policy issues. For civil society to play this role and act as an effective and authoritative, countervailing source of information, will require capacity building. It will also require recognition by other actors of the legitimacy of the role, and a means to engage with global level governance institutions to make them more accountable.

ITDG fully supports the suggestion to 'launch fresh thinking on technology and development'. The HDR 2001 is significant step towards this. Initiatives to raise the profile of technology in international development policy debate need to be planned and to take advantage of the 'networked age'. Network alliances and partnerships of technology-oriented organisations - including NGO appropriate technology organizations - could be used to promote the message.