INFRASTRUCTURE SHORTFALLS COST POOR WOMEN TIME AND OPPORTUNITY

Toward Achieving the Third Millennium Development Goal to Promote Gender Equality and Empower Women

ICRW
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Poor infrastructure **in developing countries costs women and girls both time and opportunity.** The more time women and girls spend every day fetching water and collecting firewood, the less time they have to improve their lives through education, civic participation and other activities.

Most people spend at least some part of their day doing household chores like cooking, cleaning and caring for their families. But for many women and girls living in developing countries—especially rural areas—these routine tasks can consume entire days because they lack such basic infrastructure as clean water, safe cooking fuels, electricity and transportation.

The development community already recognizes the key role that women play in helping to reduce poverty and improve the overall well-being of families and communities. If the international community is to make progress toward these and other development goals, then women must be supported through significant investments in infrastructure, particularly safe water and sanitation systems, efficient energy sources and accessible transportation.

FETCHING WATER, COLLECTING FIREWOOD, WALKING LONG DISTANCES

Poor infrastructure in developing countries affects both men and women. Yet the weight of the time burden falls heaviest on women because they tend to be responsible for more household tasks. Even a routine task like fetching water can consume more than two hours of a woman's day.

In most rural communities, for example, women and girls are the primary collectors of firewood, which typically is used for cooking in areas that lack electricity or other fuel sources. A study in Zambia found that women spend more than 800 hours per year collecting firewood; men on the other hand spend less than 50 hours per year (Malmberg Calvo 1994). Moreover, in many areas collection times are rising as locally available firewood becomes increasingly scarce.

Women also spend much of their time traveling—often on foot—because of poor transportation systems. A World Bank study found that 87 percent of travel in rural Africa takes place on foot, and within these households women are more likely than men to be doing the walking (Malmberg Calvo 1996).

LOST TIME, LOST MONEY, POORER HEALTH

Because of the significant time spent on these everyday tasks, research shows that women and girls shift time away from other important activities. Evidence from various country studies shows that the time women spend on agricultural production as well as other types of income-generating activities is diminished when they spend more time on firewood or water collection. The time they allocate to certain household tasks such as cooking also may decline.

Poor infrastructure can harm women's health as well. The heavy water containers and firewood loads that women typically carry injure their heads, necks and backs. Poor water and sanitation services can lead to disease. Poorly planned sanitation projects also have been shown to increase women's vulnerability to violence. An evaluation of communal sanitation block projects in Egypt, India, Nigeria, Sudan and Zambia, for example, revealed a high incidence of attacks on women using the facilities (Allély and Drevet-Dabbou 2002).

HOW TO ADDRESS WOMEN'S TIME BURDENS

Women and girls who live in poor communities will continue to be burdened by the everyday tasks of survival without additional investments in infrastructure. Adapting modern science and technology to meet these needs in a way that is accessible and affordable must therefore become a development priority.

Understand the Infrastructure Problem

To reduce women's time burdens, countries first must analyze their infrastructure needs and constraints by gender, income group and geographic location. Further research also is needed to explore how women's economic and domestic activities are affected by infrastructure, and identify the kinds of infrastructure needed to enhance women's productivity.

Involve Women

Women's perceptions and opinions must be taken into consideration when developing infrastructure projects to make them effective and sustainable. A study of community water

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Environmental Degradation Increases Women's Time Burden

The many hours that women and girls in developing countries spend doing routine tasks such as fetching water and firewood grow even longer when they live in degraded environments.

In the hill villages of Nepal, where women perform 82 percent of the firewood collection, extensive deforestation increases their time on this task by 75 percent per load of firewood. For women in deforested areas, this translates to an additional 1.13 hours per day collecting firewood (Kumar and Hotchkiss 1988). On the Central Plateau in Burkina Faso, where firewood demand exceeds supply because of high population density, women spend between 32 hours and 35 hours per week collecting firewood (Monimart 1989 in Saito 1994).

Studies in rural Pakistan find that as women's access to clean water deteriorates, their time spent collecting water increases (Ilahi and Grimard 2000, cited in Ilahi 2001).

and sanitation projects in 88 communities in 15 countries finds strong evidence that projects designed and implemented with the full participation of women are more sustainable and effective than those that are not (Gross, van Wijk and Mukherjee 2001). These findings corroborate a World Bank study which noted similar results from its water and sanitation projects when women were involved (Fong, Wakeman and Bhushan 1996).

Increase Access to Infrastructure Services

More than anything, women need increased access to affordable services, primarily transportation, efficient energy sources—including electricity—and water and sanitation facilities.

Transportation: Feeder and main roads can greatly reduce women's time burden and expand their opportunities, especially when combined with accessible and affordable modes of transportation. Improved transportation can increase women's chances of finding employment or training, selling their goods, expanding their social networks, accessing health care, and participating in government. Better transportation also improves the probability that girls will attend school.

Efficient Energy Sources: Cooking fuels such as kerosene and liquefied petroleum gas are good substitutes for traditional biofuels such as firewood because of their high thermal efficiency and lower levels of pollutants. Improved stoves and efficient coal production have similar benefits. Rural electrification is perhaps the most desirable alternative to biofuels, but high costs and limited availability of electricity in developing countries can restrict its use. One option is to strengthen transitional, low-cost solutions such as diesel-powered mini-grid platforms for charging batteries. These platforms already are being used by poorer people in some places.

Water and Sanitation Facilities: Men and women have different preferences for sanitation facilities because of their different needs and roles. Women tend to be more concerned with privacy and safety and are more likely to prefer enclosed latrines in or near their homes. Women and men have different priorities on water issues as well. A study in India found that female *panchayat* (local governing councils) heads tend to emphasize safe drinking water while male heads tend to emphasize irrigation systems (Chattopadhyay and Duflo 2004). Women must be part of

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the planning and decision-making process to ensure that their specific needs are met.

Ensure Affordability

In addition to providing services, governments and communities need to consider how to make these services affordable to poorer women. Local governments increasingly rely on user fees to cover the investment and operating costs of public utilities, which in some cases have reduced poor women's and girls' access to those services (Kessler 2002, Vandemoortele 2001). If user fees are imposed, some form of cross-subsidies should be given to poor women who cannot afford to pay for services (Bardhan and Mookherjee 2003). Better yet, more equitable ways of financing these services (such as general tax revenues) should be explored.

A Plan for Success: Including Women in Infrastructure Development

The Third Rural Infrastructure Development project, funded by the Asian Development Bank, was designed to promote economic growth through infrastructure improvements in rural Bangladesh. A key component of its success to date has been involving women in the planning and decision-making process.

The project implementers developed a gender action plan to increase women's participation in the project as users, managers and beneficiaries of services. Specific efforts included organizing labor contracting groups to recruit women laborers on construction sites and offering equal pay for equal work. To foster greater economic activity among women, the plan also designed separate market areas for women, gender-sensitive infrastructure to meet women's needs for privacy in such places as public buildings, and financial services and business management training for women entrepreneurs. Women also were encouraged to participate in local trade associations.

As a result, the project—which ran from 1998 and 2005—experienced several successes:

- **Transportation improved.** The construction of feeder roads, bridges and boat landings has improved rural women's mobility and access to markets year-round in affordable ways.
- **Standards of living have improved.** According to a qualitative assessment conducted in 2003 by the Local Government Engineering Department, more than 50 percent of women reported that they had changed their homes' roofs and walls from straw to tin and that they had installed sanitary latrines.
- **Household food availability improved.** Before participating in the women's markets, nearly half of participant households reported having less than three meals a day. After participating, three out of four of these households reported having enough food for three meals a day.
- **Children's school enrollment increased.** The percentage of children who attended school increased from 49 percent prior to participating in the markets to 80 percent afterward.

Source: Adapted from Pulley, Lateef, and Begum 2003.

REFERENCES

Allély, D., and O. Drevet-Dabbou. 2002. *Water, Gender and Sustainable Development: Lessons Learnt from French Co-Operation in Sub-Saharan Africa*. Paris: Drevet-Dabbous Groupe de recherche et d'échanges technologique.

Bardhan, P., and D. Mookherjee. 2003. "Decentralization and Accountability in Infrastructure Delivery in Developing Countries." Boston University Economics Department Working Paper. Boston, Mass.

Chattopadhyay, R., and E. Duflo. 2004. "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India." *Econometrica* 72 (5): 1409–43.

Fong, M.S., W. Wakeman, and A. Bhushan. 1996. "Toolkit On Gender In Water and Sanitation." Gender Toolkit Series 2. World Bank, Washington, D.C.

Gross, B., C. van Wijk, and N. Mukherjee. 2001. "Linking Sustainability With Demand, Gender, and Poverty: A Study In Community Managed Water Supply Projects In Fifteen Countries." Water and Sanitation Program Report. International Water and Sanitation Centre, Delft, Netherlands.

Ilahi N., and F. Grimard. 2000. "Public Infrastructure and Private Costs: Water Supply and Time Allocation of Women in Rural Pakistan." Economic Development and Cultural Change 49(1), pp. 45-75.

Ilahi N. 2001. "The Intra-household Allocation of Time and Tasks: What Have We Learnt from the Empirical Literature?" Policy Research Report on Gender and Development Working Paper Series No. 13. The World Bank: Washington, D.C.

Kessler, T. 2002. "Preconditions for Privatizing Essential Infrastructure Services: A Proposal for a Feasibility Study." CNES Policy Analysis Series Paper 2. Citizens' Network on Essential Services, Takoma Park, Md.

Kumar S.K., and D. Hotchkiss. 1988. "Consequences of Deforestation for Women's Time Allocation, Agricultural Production, and Nutrition in Hill Areas of Nepal." Research Report 69, International Food Policy Research Institute: Washington, D.C.

Malmberg Calvo, C. 1994. "Case Study on the Role of Women in Rural Transport: Access of Women to Domestic Facilities." Sub-Saharan Africa Transport Policy Program, World Bank and Economic Commission for Africa Working Paper 11. World Bank, Washington, D.C.

———. 1996. "Promoting Intermediate Means of Transport." Sub-Saharan Africa Transportation Policy Program Working Paper 20. World Bank, Washington, D.C.

Monimart, M. 1989. *Femmes du Sahel.* Karthala and OCDE/Club du Sahel, Paris, France.

Saito, K., H. Mekonnen, and D. Spurling. 1994. *Raising the Productivity of Women Farmers in Sub-Saharan Africa*, World Bank. Discussion Paper. Washington, D.C.

Pulley T.A., S. Lateef, and F.S. Begum. 2003. *Making Infrastructure Work for Women in Bangladesh*. Asian Development Bank, Manila, Philippines.

Vandermoortele, J. 2001. "Towards Gender-Responsive Budgeting: Are User Fees and Narrow Targeting Gender Neutral?" U.N. Development Program, New York.

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